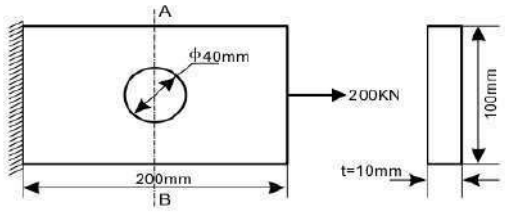
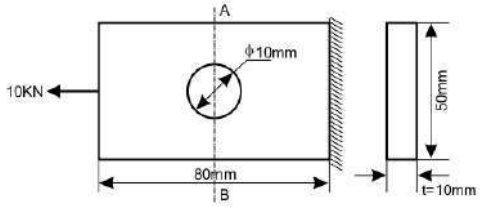
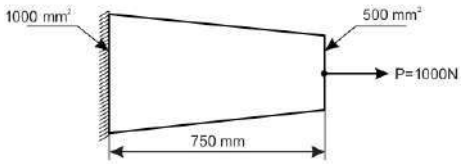
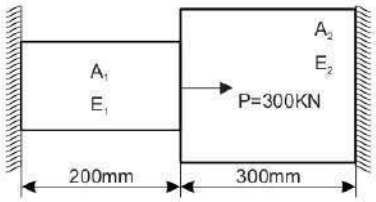
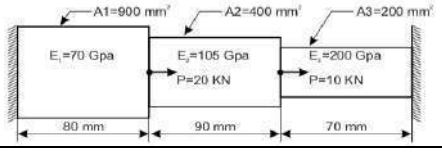
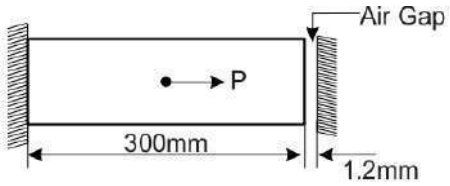
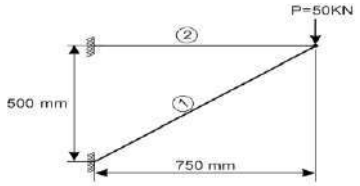
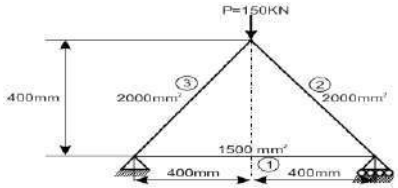
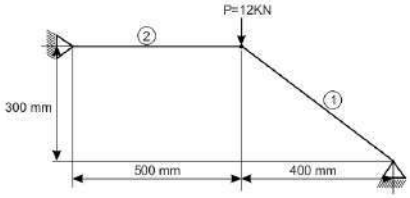
List of experiments conducted by the students

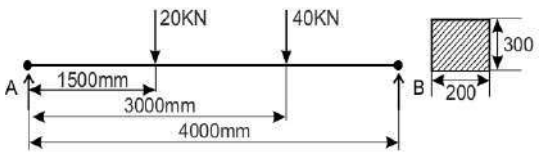
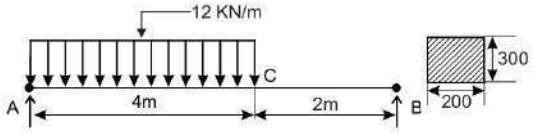
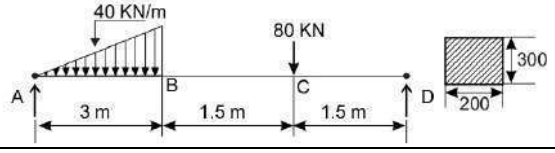
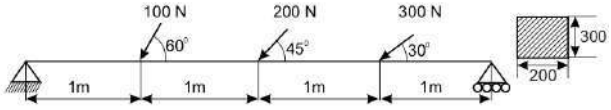
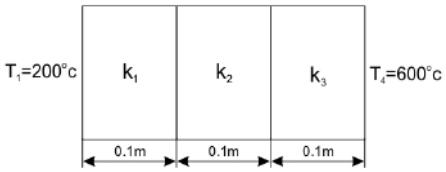
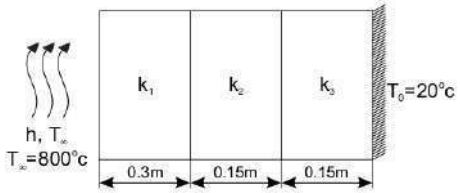
Institute is permanently affiliated to the Visvesvaraya Technological University, Belgaum. In view of NEP-2020 based revised curriculum of the affiliated university, the following experiments are conducted by the students as per the time table during every academic year. The lab journal/report submitted by the student, observations and results of each experiment, discussion on results and conclusions are continuously evaluated by the course coordinator as per the university guidelines. The realization of theoretical concepts and experimental results of each student are also evaluated in the internal assessment after completion of all experiments of the course through proper rubrics and in the semester end exams as per the university guidelines by the internal and external evaluators. The students are also conducted the integrated lab experiments of professional core courses (IPCC) as per the revised curriculum of the university recommended by AICTE. The following are the list of aims of experiments conducted by the students during last five years.

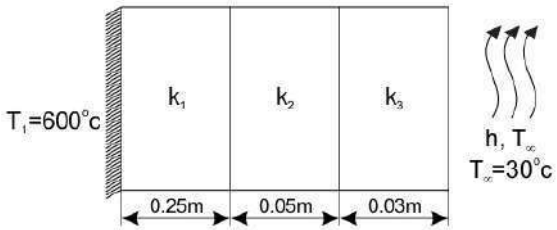
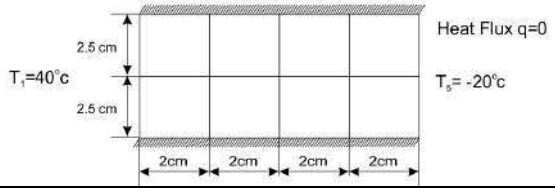
S.N.	Title/Aim of the Experiment	Dept.
1.	To determine the co-efficient of discharge of venturimeter and to draw following graphs. 1) Actual Discharge Vs Head, 2) Co-efficient of Discharge Vs Head	ME
2.	To determine the co-efficient of discharge of Orifice meter and draw the following graphs 1) Actual Discharge Vs Head 2) Co-efficient of Discharge Vs Head	ME
3.	To determine the co-efficient of friction in pipe.	ME
4.	To determine the loss of velocity co-efficient due to minor losses.	ME
5.	To determine the co-efficient of discharge of Triangular or V - Notch.	ME
6.	To determine impact of jet on Vane and to draw the following & to Draw the following Curves, 1) Discharge V/s efficiency, 2) Discharge V/s force Lifted.	ME
7.	To study the performance of a centrifugal pump at constant speed. and to draw the following Curves,1) Head Vs Overall efficiency. 2) Head Vs output Power.	ME
8.	To study the performance of Reciprocating Pump at constant speed and to draw the following a curves. 1) Head Vs Overall efficiency, 2) Head Vs output Power.	ME
9.	To study the performance of Pelton wheel under various load conditions and to draw following graphs. 1) Speed Vs Output power, 2) Speed Vs Efficiency	ME
10.	To study the performance of Francis Turbine at constant head and to draw following graphs. 1) Speed Vs Output power 2) Speed Vs Efficiency	ME

11.	To study the performance of Kaplan Turbine at constant head and to draw following graphs. 1) Speed Vs Output power 2) Speed Vs Efficiency	ME
12.	To determine the volumetric efficiency of an Air compressor.	ME
13.	To determine the flash point of given sample of oil by using Cleavland Apparatus	ME
14.	To determine the flash point of given sample of oil by using Penesky Martins Apparatus.	ME
15.	To determine the flash point of given sample of oil by using Abel's Apparatus.	ME
16.	To determine the viscosity of given sample of oil by using Redwood Viscometer.	ME
17.	To determine the viscosity of given sample of oil by using Saybolt Viscometer.	ME
18.	To determine the viscosity of given sample of oil by using Torsion Viscometer.	ME
19.	To determine the calorific value of solid fuel by using Bomb Calorimeter.	ME
20.	To determine the calorific value of liquid fuel by using Junkers Gas Calorimeter.	ME
21.	To conduct a performance test on two strokes single cylinder petrol engine.	ME
22.	To prepare the heat balance sheet on two stroke single cylinder petrol engine.	ME
23.	To conduct performance test on the VCR engine under compression ratio _____ & draw the graphs. (1. Sfc vs BP and 2. Mfc vs BP)	ME
24.	To prepare the heat balance sheet on the VCR engine under compression ratio ____	ME
25.	To conduct a performance test on the four stroke single cylinder diesel engine & draw the graphs. (1. Sfc vs BP and 2. Mfc vs BP)	ME
26.	To prepare the heat balance sheet on the four stroke single cylinder diesel engine.	ME
27.	Determination of equilibrium speed, sensitiveness, power, controlling force & Effort of Porter Governor.	ME
28.	Determination of equilibrium speed, sensitiveness, power, controlling force & Effort of Proell Governor.	ME
29.	To verify the gyroscope relationship $C=I\ \omega\ \omega p$ Where:-I =moment of inertia. ω = angular velocity of rotor. Rad./sec. ωp= angular velocity of precision. Rad/ sec.	ME
30.	To determine the critical speed of a shaft and compare the actual value with the theoretical value.	ME
31.	To determine static deflection, stiffness of the given spring & also find the natural Frequency of spring mass system. (Free Longitudinal Vibration).	ME
32.	To study the forced vibrations of equivalent spring mass damper system under different damping conditions, and plot the Amplitude v/s Frequency curve.	ME
33.	To determine the natural frequency, Torsional stiffness, logarithmic decrement, damping ratio, damping coefficient for torsional viscous damper. Also plot the graph of damping ratio v/s depth of immersion.	ME
34.	To conduct an experiment on balancing of rotating masses for both Static balance and dynamic balance.	ME
35.	To conduct the performance test on the Journal Bearing and study the effect of speed and load on the pressure distribution in Journal Bearing.	ME
36.	Determination of material fringe value and fringe constant for photo elastic material using circular disc.	ME
37.	Determination of fringe constant of photo elastic material using four point Bending	ME

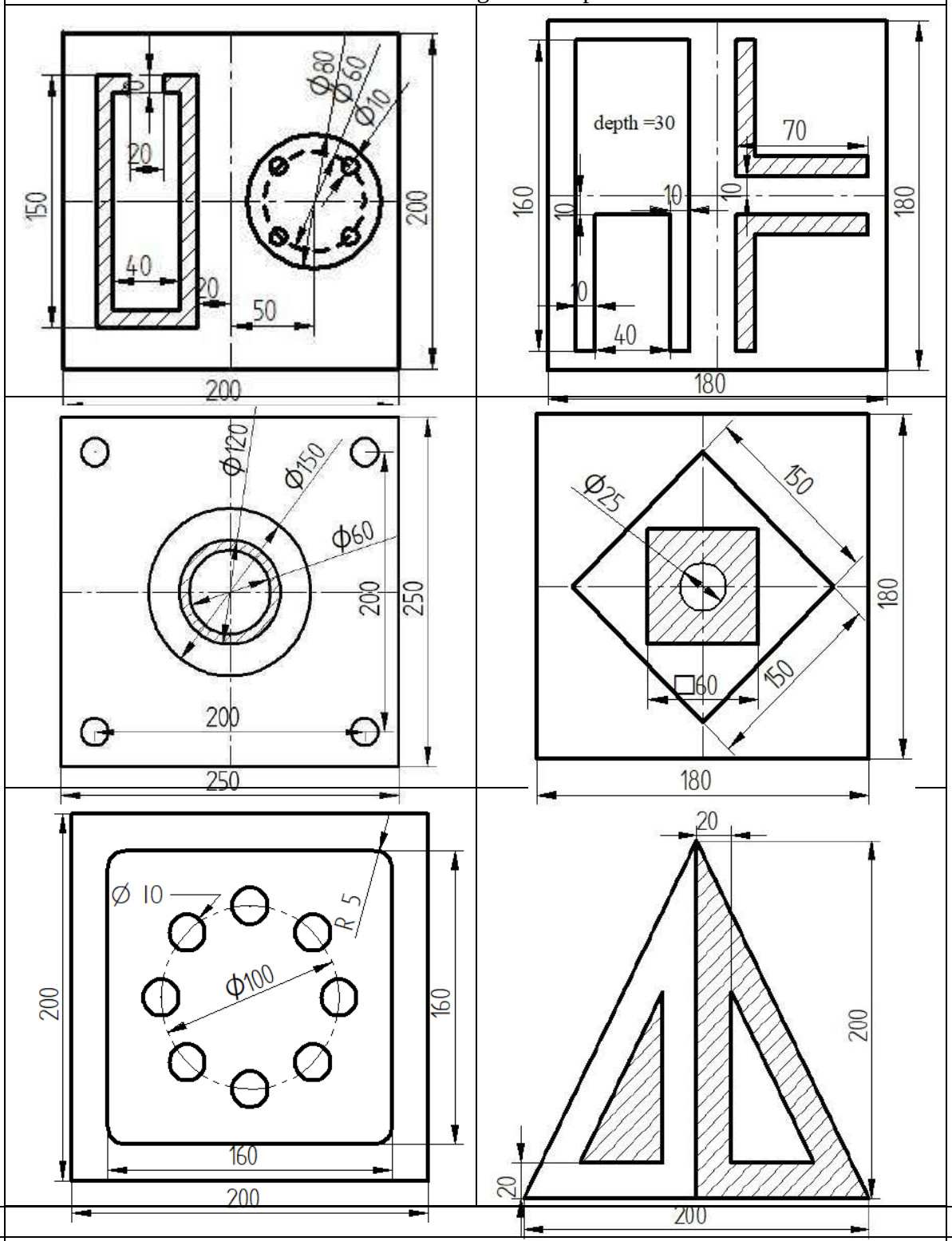
	arrangement	
38.	In a plate with a circular hole under axial loading. Find deformed shape of hole & determine maximum stress distribution along AB, thickness of plate is 10mm & Dia. of hole is 40mm, size of plate is 200mm X 100mm & axial load is 200KN. One end is fixed, other end is free. **Take E= $2X10^5$MPa.** 	ME
39.	In a plate with a circular hole under axial loading. Find deformed shape of hole & determine maximum stress distribution along AB, thickness of plate is 10mm & Dia. of hole is 10mm, size of plate is 80mm x 50mm & axial load is10KN. One end is fixed, other end is free. **Take E= $2X10^5$MPa?** 	ME
40.	Determine the Nodal Displacement, Stresses & reaction forces for the tapered bar, the cross-sectional area decreases linearly from 1000mm^2 to 500mm^2.Young's Modulus E = 2 x 10^5 N/mm^2 ? **Area A_1 = 1000 mm^2 A_2 = 500 mm^2** 	ME
41.	Find the Nodal Solution for the stepped bar both ends are fixed as shown in figure. It is subjected to axial load of 300KN. Also Determine displacement stress and reactions? **Area A_1=900 mm^2, A_2 = 1200 mm^2, E_1 = 70 x10^3N/ mm^2, E_2 = 200 x 10^3 N/mm^2** 	ME
42.	Find the Nodal Displacement, stresses and reaction solutions for the structure as shown in the figure?	ME

		
43.	Determine the Nodal Displacement, Reaction Solution & Stress for the given bar? E = 200 X 10^3 N/mm^2, P = 60 X 10^3 N A1 = A2 = 250mm^2 	ME
44.	For given truss find the following points? 1) Nodal Displacement, 2) Stresses 3) Reaction Solutions for a truss? Take Young's Modulus **E = 2 x 10^5 N/mm^2** **Area A_1= 1200mm^2 A_2= 1000mm^2** 	ME
45.	For a three bar truss as shown in figure. Determine: Nodal Displacement, Stresses. Reaction Solutions for the truss? Take Young's Modulus **E = 200 Gpa.** 	ME
46.	For given truss find the following points? 1.Nodal Displacement, 2. Stresses, 3. Reaction Solutions for a truss? Take Young's Modulus **E = 200 Gpa, A_1 = A_2 = 200mm^2** 	ME
47.	Simply supported beam subjected to concentrated load compute the shear force (SFD) and bending moment diagram (BMD) for the beam as shown in fig. and reaction at the supports. Take rectangular C/S area is 200mm x 300mm? **E = 2 x 10^5 N/mm^2**	ME

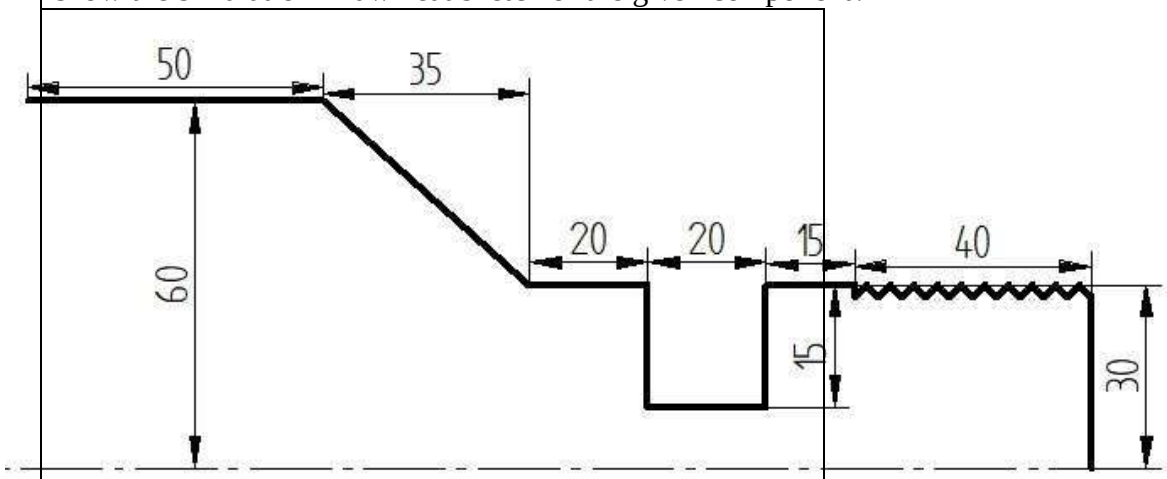
		
48.	Determine shear force and bending moment for the Beam element as shown in Fig.? Take **E = 2 x 10^5 MPa** **A = 200 x 300 mm^2** 	ME
49.	Find the shear force and bending moments for the Beam element as shown in Fig.? **E = 2 x 10^5 MPa A = 200 x 300 mm^2** 	ME
50.	Determine the SFD & BMD for the Beam as shown in Fig. 	ME
51.	and  Determine the Natural Frequency Mode shape for fixed beam. **E = 2.068 X 10^{11} N/m^2 =7830 kg/m^3**	ME
52.	For the element as shown in Fig. The left end has constant Temperature T_1=200°c & right end has temperature T_4=600 °c. Take **K_1 =5W/m°c. K_2 =10W/m°c. K_3=15W/m°c. Area of element = 0.1m^2** 	ME
53.	A composite wall consists of 3 material as shown in Fig. The outer temperature is T0=20°c convection heat transfer takes place on inner surface of wall with T∞ =800°c & fin co-efficient h=25 w/m°c. Determine intermediate temperature of wall. Given **K_1 =20W/m°c. K_2 =30W/m°c. K_3=50W/m°c.** 	ME
54.	A composite wall is made of 3 layers as shown in Fig. Their thermal conductivities are K_1=8.5W/mK, K_2=0.25W/mK, K_3=0.08W/mK. Rate of	ME

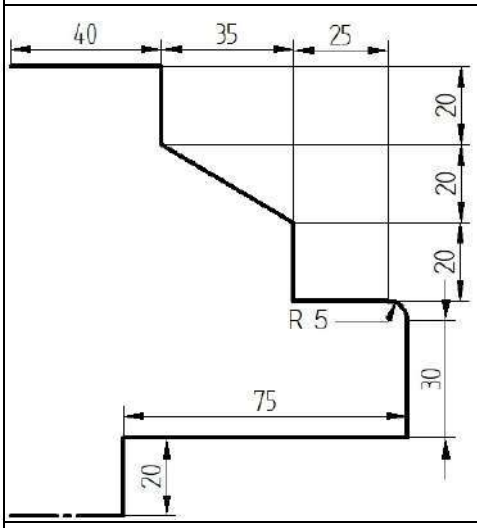
	heat transfer co-efficient h=45W/m^2 K. Assume c/s area A=1m^2, T_1=600°C, T_∞ =30°C. Determine intermediate temperature of given wall. 	
55.	For body as shown in Fig. Determine the temperature distribution. The body is insulated along top & bottom edges, K_{xx} = K_{yy} = 1.7307 w/m° C. No internal heat generation is present. **Heat Flux q=0** 	ME

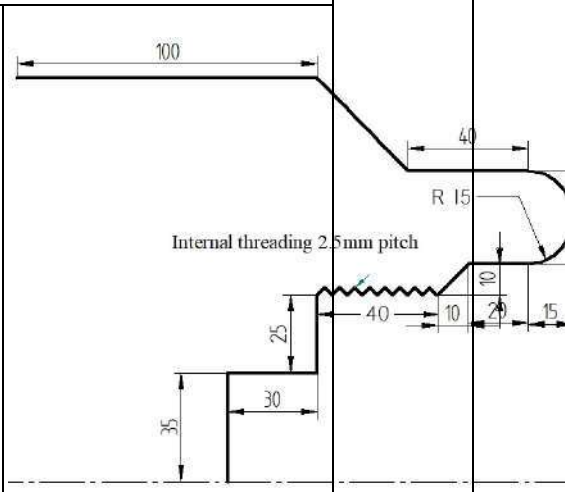
56.	write a brief procedure and simulate the following component using CAM software and show the simulation Draw neat sketch of the given component?	ME
57.		ME
58.	write a brief procedure and simulate the following component using CAM software and	ME

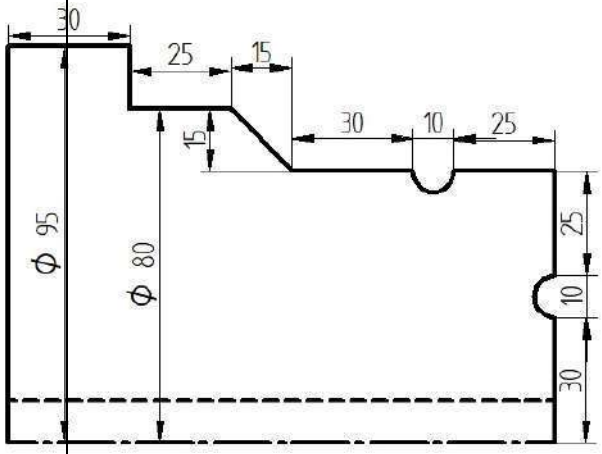


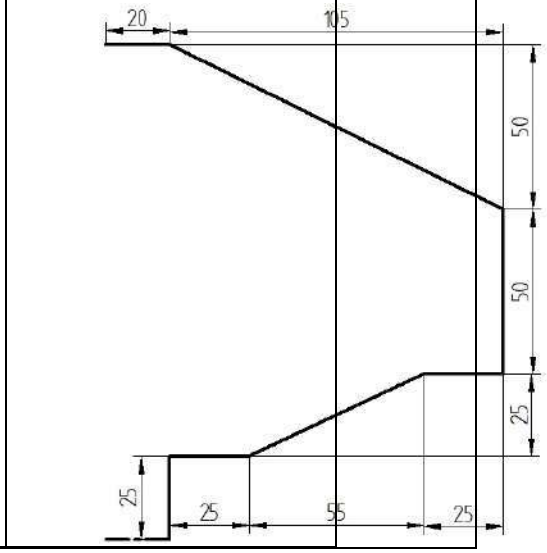
show the simulation Draw neat sketch of the given component?



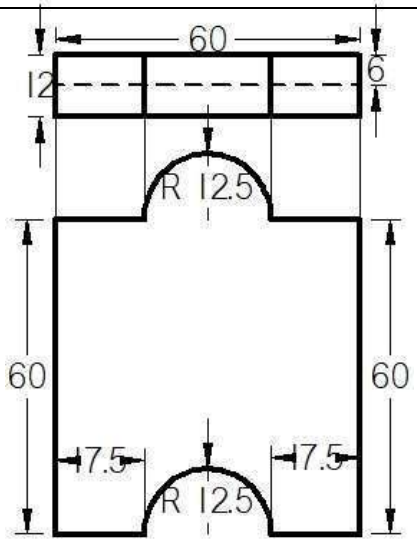


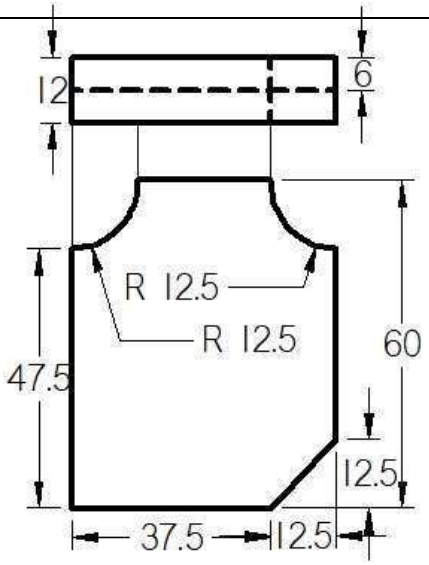


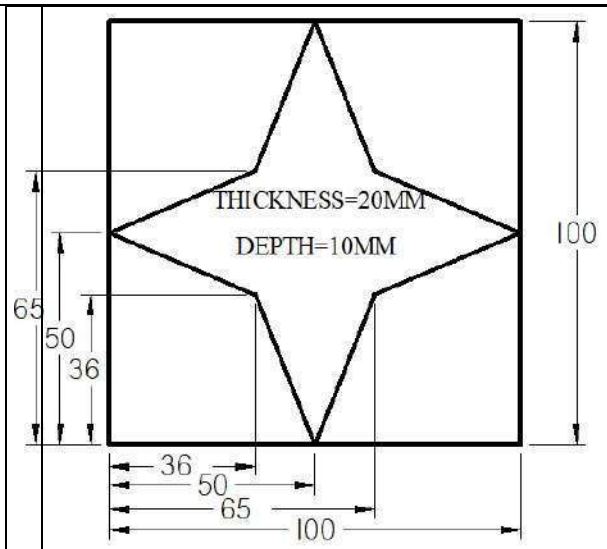


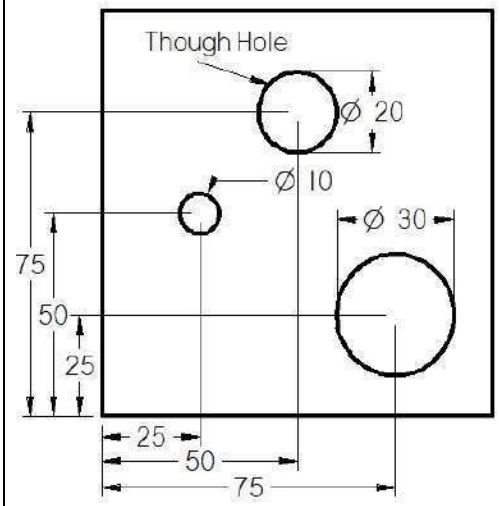


59.	Write a manual part programme for given component and verify the Simulation using NCVerify Software.	ME



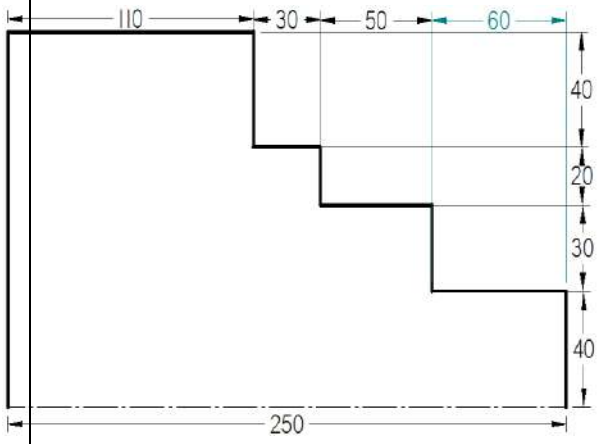


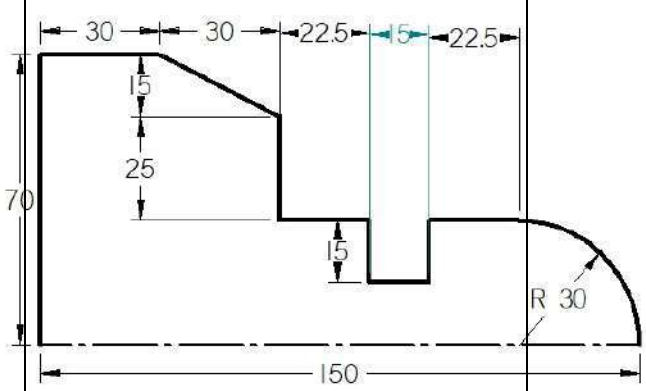


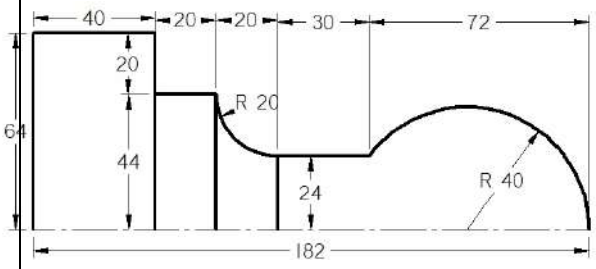
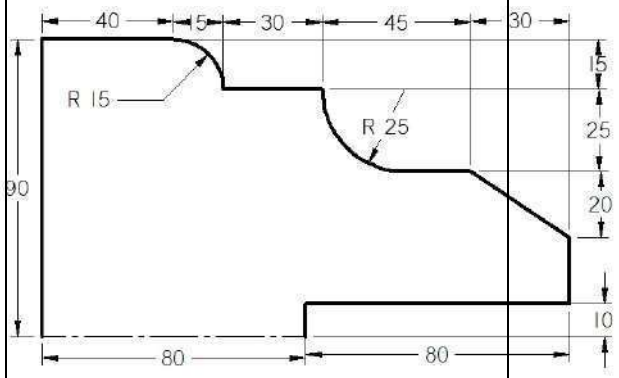
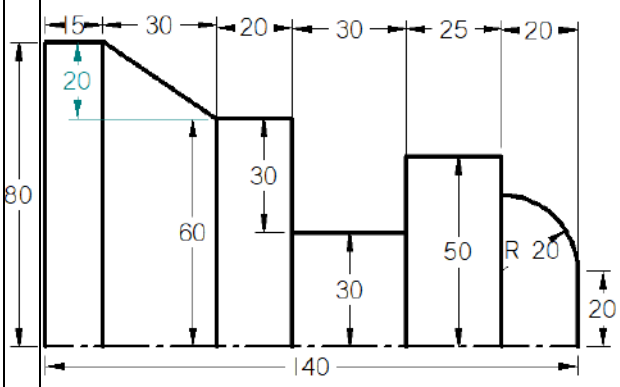
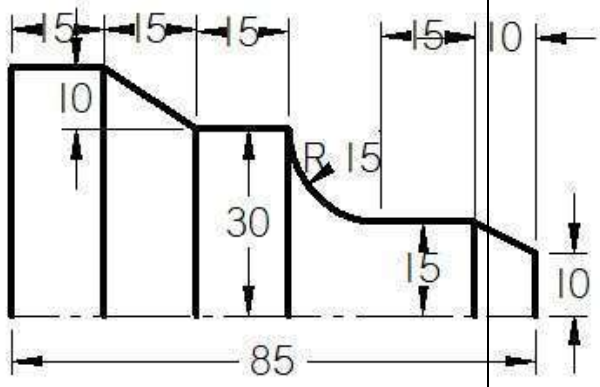
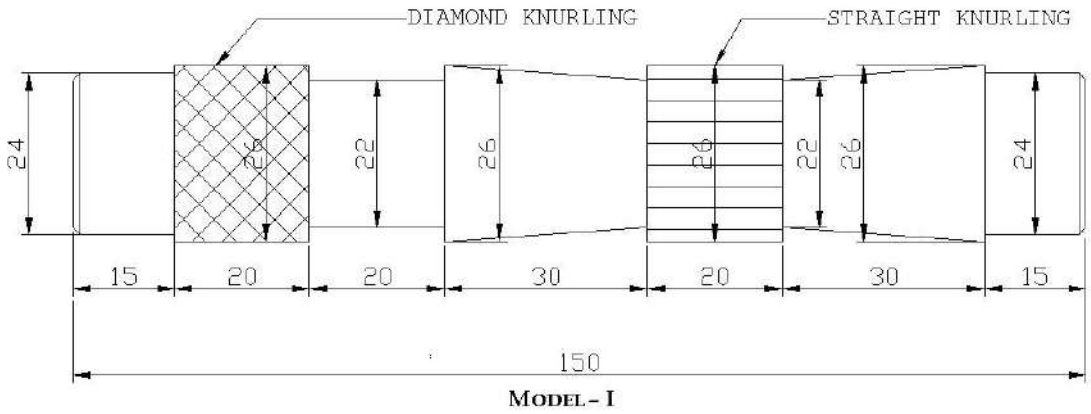


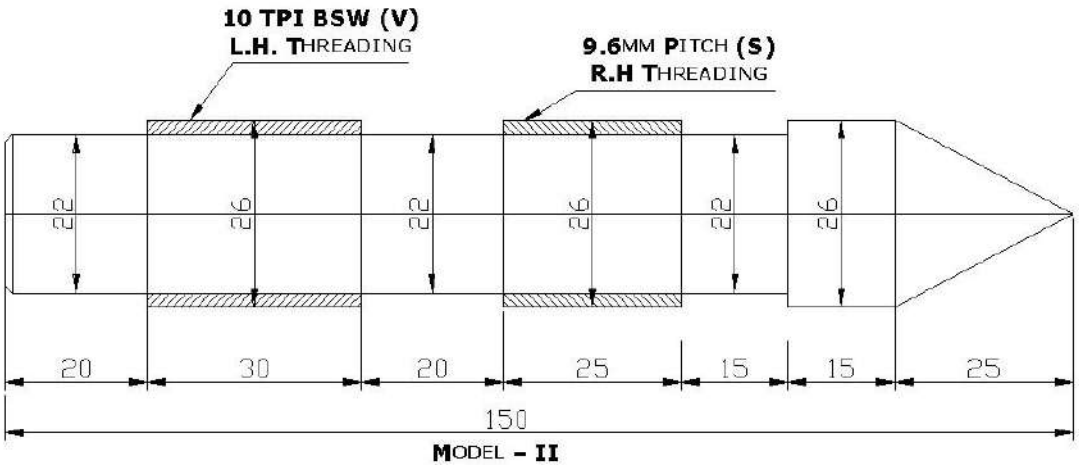
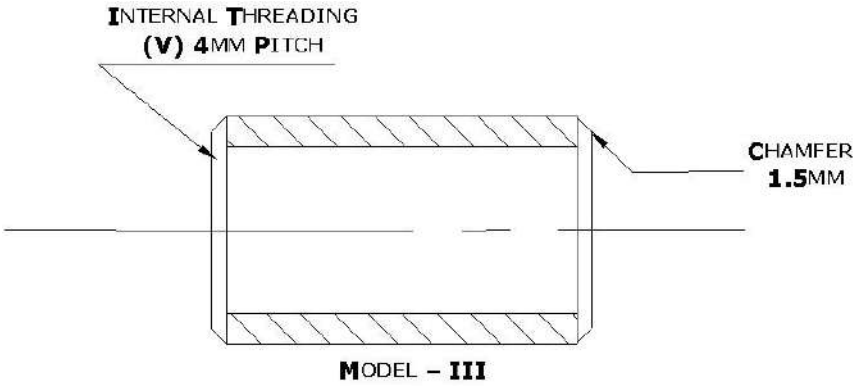
60. Write a manual part programme for given component and verify the Simulation using NCVerify Software — ME

B8





B9			**B10**		
B11			**B12**		
61.	**Aim:** To perform machine cutting operations on a given metal rod to obtain the model shown below.  MODEL – I				ME

62.	**AIM:** To perform machine cutting operations on a given metal rod to obtain the model shown below.  MODEL – II	ME
63.	**Aim:** To perform machine cutting operations on a given metal rod to obtain the model shown below  MODEL – III	ME
64.	To determine the Rockwell hardness number of given specimen.	ME
65.	To determine the Brinell hardness number of given specimen.	ME
66.	To determine strength of notched mild steel specimen using Izod impact test.	ME
67.	To determine strength of notched mild steel specimen using Charpy Impact test.	ME
68.	To determine Tensile Strength of Mild steel specimen.	ME
69.	To determine compressive strength of a wooden specimen when loaded. 1) Along the grains. 2) Across the grains.	ME
70.	To determine the torsional strength of the given mild steel specimen.	ME
71.	To determine the crack in given weld using penetration Test.	ME
72.	To etch the surface of the prepared sample using suitable element to observe the	ME

	constituents of the micro-structure.	
73.	To conduct static bending test on timber.	ME
74.	To determine the ultimate shear stress of the given specimen in single and double shear.	ME
75.	Heat Treatment of Mild steel.	ME
76.	To determine the co-efficient of friction under test of the given material. To determine the weight loss of given material under wear tester.	ME
77.	To study the ultrasonic flow detector and to determine the location of the interior crack of cavity given specimen	ME
78.	To detect the surface or subsurface crack of the given ferromagnetic material.	ME
79.	To study slip gauges and build up a slip gauge for given dimensions.	ME
80.	To calibrate the given load cell with the help of fulcrum weights.	ME
81.	To calibrate the thermocouple using glass thermometer.	ME
82.	To determine the straightness & flatness of surface by using autocollimator.	ME
83.	To determination of experimental young's modulus of aluminum specimen by using strain gauges and compare with theoretical young's modulus.	ME
84.	To calibrate the micrometer using slip gauges.	ME
85.	To calibrate the LVDT with respect to micrometer by spring core method.	ME
86.	To study the use of bevel protractor and to measure the angle.	ME
87.	To measurement of angles using sine bar.	ME
88.	To measurement of angles using sine centre.	ME
89.	To measurement of gear tooth profile using gear tooth Vernier caliper.	ME
90.	To measurement of the linear and angular parameters of screw thread using toolmaker's microscope.	ME
91.	To measurement of the screw thread parameters using three wire method.	ME
92.	To study the flatness of the surface by using optical flats.	ME
93.	To conduct an experiment to find out the compression strength of the given sand test specimen.	ME
94.	To conduct an experiment to find out the shear strength of the given sand test specimen.	ME
95.	To find the grain fineness no of the given sand sample.	ME
96.	To determine the percentage of clay in the given sand sample.	ME
97.	To determine the permeability no of given sand sample.	ME
98.	To cut an ellipse of given dimensions.	ME
99.	To make equilateral triangle core in a circle.	ME
100.	To make hexagonal cavity in a square.	ME
101.	To make round bar to square bar.	ME
102.	To make eye hook in a round bar.	ME
103.	To make round headed bolt using round bar.	ME

104.	Determination of Thermal Conductivity of a Metal Rod.	ME
105.	Determination of Overall Heat Transfer Coefficient of a Composite wall.	ME
106.	Determination of Effectiveness on a Metallic fin.	ME
107.	Determination of Heat Transfer Coefficient in a free Convection on a vertical tube.	ME
108.	Determination of Heat Transfer Coefficient in a Forced Convention Flow through a Pipe.	ME
109.	Determination of Emissivity of a Surface.	ME
110.	Determination of Stefan Boltzman Constant.	ME
111.	Determination of LMDT and Effectiveness in a Parallel Flow and Counter Flow Heat Exchangers	ME
112.	Experiments on Boiling of Liquid and Condensation of Vapour	ME
113.	Performance Test on a Vapour Compression Refrigeration.	ME
114.	Performance Test on a Vapour Compression Air - Conditioner	ME
115.	Experiment on Transient Conduction Heat Transfer.	ME
116.	Draw the projection of the following points on the same XY line, keeping convenient distance between each projector. Name the Quadrants in which they lie. A - 30 mm above HP & 35 mm in front of VP. B - 35 mm above HP & 40 mm behind VP. C - 40 mm above HP & on VP. D - 35 mm below HP & 30mm in front of VP.	ME
117.	Draw the projection of the following points on the same XY line, keeping convenient distance between each projector. Name the Quadrants in which they lie. E - 30 mm below HP & 25 mm behind VP. F - 35 mm below HP & 30mm in front of VP. G - On HP & 30mm in front of VP. H - On HP & 30 mm behind VP.	ME
118.	Draw and state the quadrants in which the following points are located. Assume any distance. A - Front view below XY line & top view above XY line. B - Front & Top views are below XY line. C - Front & Top views are above XY line. D - Front view above XY line & top view below XY line.	ME
119.	A point 30mm above XY line is the front view of two points A& B. The top view of A is 40 mm behind VP & the top view of B is 45 mm front of VP draw the projection of the points & state the quadrants in which the points are situated.	ME
120.	A point A is 30mm in front of VP and 40 mm above HP. Another point B is 20 mm behind VP & 35 mm below hp The horizontal distance between the points measured parallel to XY line is 60mm. Draw the three projections of the points. Join their front and top views.	ME
121.	Draw all the three views of a point P lying 60mm below HP 70 mm in front of VP and 40 mm from the RPP. Also state the quadrants in which it lies.	ME
122.	A point P is on HP and 30 mm in front of VP. Another point Q is on VP and below HP. The line joining their front views makes an angle of 30° to XY line while the line joining	ME

	their top views makes an angle of 45° with XY line. Find the distance of the point Q from HP.	
123.	Two points R & S on HP. The point R is 35 mm in front of VP. While S is 50 mm behind VP. The line joining their top views makes an angle of 40° with XY. Find the horizontal distance between the two projectors.	ME
124.	A point G is 25mm below HP & situated in the third quadrant its shortest distance from XY line is 45 mm. Draw its projections and find its distance from VP.	ME
125.	A point S is in the first quadrant and equidistance of 50 mm from all the three principle planes Draw the projection of the point. Draw all the three views of the point.	ME
126.	Draw the projection of point G which is in first quadrant such that it is equidistance from HP & VP. The point is 25mm from RPP. Determine its distances from HP & VP.	ME
127.	A point R is 25mm above HP & 20mm in front of VP. Another point S is on HP & 30mm behind VP. The distance between their projectors measured parallel to the line of intersection of VP & HP is 50mm. Find the distance between the top views of points R & S.	ME
128.	A point M is on HP & 30 mm in front of VP. Another point N is 20mm below HP and 20mm in front of VP. The distance between their projectors measured parallel to XY line is 50mm. Find the distance between front views of the points M & N.	ME
129.	A point P is on HP and 30 mm infront of VP. Another point Q is on VP and 40mm above HP. The distance between their projectors parallel to XY line is 50mm. Find the distance between their front and top views of the points p and Q.	ME
130.	A point P is 30mm in front of VP, 40mm above HP and 50mm from RPP. Draw its projections.	ME
131.	The point P is 45mm above HP, 60 mm behind VP and 30mm from RPP. Draw the three principles view of the point. Also state the quadrant in which it lies.	ME
132.	Draw all the three view of a point P lying 60mm below HP, 70mm infront of VP and 40 mm from the RPP. Also state the quadrant in which it lies.	ME
133.	A point is 30mm in front of VP, 20mm above HP & 25 mm in front/behind/ from LPP. Draw its projections and name the side view.	ME
134.	A point is 40mm behind VP, 15mm above HP and 25 mm in front/behind/ from LPP. Draw the projection and name the side view.	ME
135.	A point is 30mm behind VP, 30mm above HP and 25 mm in front/behind/ from LPP. Draw the projection and name the side view.	ME
136.	A point is lying on HP, 20mm behind VP and 25mm behind/in front/from RPP. Draw the projection and name the side view.	ME
137.	A point is 35mm below HP, 20mm behind VP and 25mm behind/in front/ from RPP. Draw its projections and name the side view.	ME
138.	A point is lying on VP, 20mm below HP and 30mm behind/in front/from LPP. Draw the projection and name the side view.	ME
139.	A point A is 20mm above HP & 25 mm infront of VP. Another point B is 25mm behind VP and 40mm below HP. Draw their projections when the distance between their projectors parallel to XY line is zero mm. add the right side view only to point B.	ME
140.	Draw the projections of the following points on the same XY line, keeping convenient distance between each projector. Name the Quadrants in which they lie.	ME

	P – 20 mm above HP & 35mm infront of VP. Q – 30mm above HP & 40mm behind VP. R – 40mm above HP & on VP. S – 35mm below HP & 30mm infront of VP.	
141.	Draw the projections of the following points on the same XY line, keeping convenient distance between each projector. Name the Quadrants in which they lie. M - 30mm below HP & 25mm behind VP N - 35mm below HP & 30mm in front of VP P – On HP & 30mm infront of VP Q – On HP & 35mm behind VP.	ME
142.	State the Quadrant in which the following points are located. Assume any distances. A - Front view below XY & Top view above XY line B - Front and top views are below XY line. C - Front and top views are above XY line. D - Front view above XY & Top view below XY line.	ME
143.	A point 30mm above XY line is the front view of three points P, Q and R. The top view of R is 40 mm behind VP, the top view of Q is on XY line and top view of point P is 45mm in front of VP. Draw the projections of the points & state the Quadrants in which the points are situated.	ME
144.	A point M is 30mm in front of VP and 20mm above HP. Another point N is 15 mm behind VP & 25mm below HP. The horizontal distance between the points parallel to XY line is 50mm. Draw the projection of the points M& N and join their front and top views. Draw the right side view for the point N only.	ME
145.	The common point 40mm below XY line represents not only the front view of three points A, B and C but also the top view of point C. The top view of point B is lies on XY line and top view of point A is lies 50mm above it. Draw the projection of the points and add the right side view to the point A only. Also state in which quadrants the points lie.	ME
146.	A point A is on HP and 35mm in front of VP. Another point B is on VP and below HP. The line joining their front views makes an angle of 30° to XY line while the line joining their top views makes an angle 45°with XY line. Find the distance of the point B from HP.	ME
147.	Two points P and Q are on HP. The point P is 30mm behind VP, while Q is 50mm in front of VP. The line joining their top views make an angle of 40° with XY. Find the horizontal distance between their projectors parallel to XY line.	ME
148.	A point A is 40 mm in front of VP and is situated in the fourth quadrant. Its shortest distance from the intersection HP & VP is 45mm. Draw its projections. Also find the distance from HP.	ME
149.	A point A is 20mm above HP and in the first quadrant its shortest distance from the XY line is 40mm. draw the projections. Determine the distance from VP.	ME
150.	Draw the projections of the following points on the same XY line, keeping convenient distance between each projector. Name the Quadrants in which they lie. P - 10mm above HP & 15mm in front of VP. Q - 15mm above HP & 25mm behind VP. R – 25mm below HP & in VP.	ME

	S – 40mm above HP & in VP.	
151.	A point P is 25 mm above HP and 20mm in front of VP. Another point Q is on HP and 30 mm behind VP. The distance between their projectors measured parallel to the line of intersection of VP and HP is 50mm. Find the distance between the top views of points P and Q.	ME
152.	A point A is on HP & 30mm infront of VP. Another point B is 20 mm below HP and 20mm In front of VP. The distance between their projectors measured parallel to XY line is 50mm. Find the distance between the front views of the points A & B.	ME
153.	A point P is on HP and 30mm infront of VP. Another Point Q is on VP & 40 mm above HP. The distance between their projectors parallel to XY line is 50mm. Find the distance between their front and top view of the points P & Q.	ME
154.	Draw the projections of a point A lying 30mm above HP and in first quadrant, if its shortest distance form the line of intersection of HP and VP is 50mm. Also find the distance of the point from VP.	ME
155.	Draw the projections of the following points on the same reference XY line & state the Quadrants in which they lie E – 35mm above HP & on VP. F – 30mm below HP & on VP. G – On HP & 25mm behind VP. H – On HP & 30mm infront of VP.	ME
156.	A point 20mm below the reference XY line is the top view of three points P,Q & R. P is 20 mm below HP, Q is 35mm above HP and R is on HP. Draw the projections of the three points and state their position & quadrants in which they situated.	ME
157.	A point is 30 mm in front of VP, 20mm above HP & 25mm infront/behind/ from LPP. Draw its projections and name the side view.	ME
158.	A point is 40mm behind VP, 20mm above HP and 30 mm in front/behind/from LPP. Draw its projections and name the side view.	ME
159.	A point is 30mm behind VP, 30mm above HP and 25mm infront/behind/from RPP. Draw its projections and name the side view.	ME
160.	A point is lying on VP, 10mm below HP & 30mm behind/in front/from LPP. Draw its projections and name the side view.	ME
161.	A point is lying on HP, 20mm behind VP & 35mm behind/in front/from RPP. Draw its projections and name the side view.	ME
162.	A point is 35mm below HP, 15mm behind VP & 25mm behind/in front/from RPP. Draw the projection and name the side view.	ME
163.	A point P is 15 mm above HP & 25mm in front of VP. Another point Q is 25mm behind VP and 40mm below HP. Draw their projections when the distance between their projectors parallel to XY line is zero mm. Add the right side view only to point Q.	ME
164.	Draw the projections of the following points on the same XY line, keeping convenient distance between each projector. Also state the quadrants in which they lie. P - 25mm above HP & 35mm in front of VP Q - 30mm above HP & 40mm in front of VP R - 40mm above HP & on VP S - 35mm below HP & 30mm in front of VP.	ME

165.	Draw the projections of the following points on the same XY line, keeping convenient distance between each projector. Also state the Quadrants in which they lie. A - 30mm below HP & 25mm behind VP. B - 35mm below HP & 30mm in front of VP. C - On HP & 30mm in front of VP. D - On HP & 35mm behind of VP.	ME
166.	A line AB 80mm long has its end A 20 mm above the HP and 30 mm infront of VP. It is inclined at 30 to HP and 45 to VP. Draw the projection of the line and find apparent lengths and apparent inclinations.	ME
167.	A line AB 80mm long is inclined to HP at 30 and inclined to VP at 45. The end A touches both HP & VP. Draw front and top views of line and determine their lengths. Also measure the perpendicular distance of end B from both HP and VP.	ME
168.	A line AB has its end A 20 mm above the HP and 30 mm infront of the VP. The other end B is 60 mm above the HP and 45mm infront of VP. The distance between end projectors is 70 mm. Draw its projections. Determine the true length and apparent inclinations.	ME
169.	A line AB has its end A 20 mm above the HP and 15 mm infront of the VP. The other end B is 60 mm above the HP & 45mm infront of VP. The distance between end projectors is 70 mm. Draw its projections. Determine the apparent lengths and true inclinations.	ME
170.	The top view pq of a straight line is 70 mm and makes an angle of 60 with XY line. The end Q is 10 mm infront of VP and 30 mm above the HP. The difference between the distances of P and Q above the HP is 45 mm. Draw the projections. Determine its true length and true inclinations with HP and VP.	ME
171.	A line PQ 85 mm long has its end P 10 mm above the HP and 15 mm infront of the VP. The top view and front view of line PQ are 75 mm and 80mm respectively. Draw its projections. Also determine the true and apparent inclinations of the line.	ME
172.	A line has its end A 10 mm above Hp and 15 mm infront of VP. The end B is 55 mm above HP and line is inclined at 30 to HP and 35 to VP. The distance between the end projectors is 50 mm. Draw the projections of the line. Determine the true length of the line and its inclinations with VP.	ME
173.	The top view of a line 75 mm long measure 50 mm. The end P is 30 mm infront of VP and 15 mm above HP. The End Q is 15 mm infront of VP and above HP. Draw the Projections of the line and find its true inclinations with HP and VP.	ME
174.	A line AB 60 mm long has one of its extremities 20 mm infront of VP and 15 mm above HP. The line is inclined at 25 to HP and 40 to VP. Draw its top and front views.	ME
175.	A line AB measuring 70 mm has its end A 15mm infront of VP and 20 mm above HP and the other end B is 60mm infront of VP and 50 mm above HP. Draw the projections of the line and find the inclinations of the line with both the reference planes of projections.	ME
176.	The front view of a 90 mm long line which is inclined at45 to the XY line, measures 65 mm. End A is 15 mm above the XY line and is in VP. Draw the projections of the line and find its inclinations with HP and VP.	ME
177.	The distance between the end projectors through the end points of a line AB is 60 mm.	ME

	The end A is 10 mm above HP and 15 mm in front of VP. The end B is 35 mm infront of VP. The line AB appears 70 mm long in the front view. Complete the projections. Find the true length of the line and its inclinations with HP and VP.	
178.	The distance between the end projectors through the end point of a line AB is 40mm. The end A is 20mm above HP and 15mm in front of VP. The end B is 45mm infront of VP. The line AB appears 50mm long in the front view. Complete the projections. Find the true length of the line and its inclination with HP and VP.	ME
179.	The point B of a line AB is on the horizontal plane, the top view of the line makes an angle of 30° with XY line, being 80mm. The point A is on the vertical plane and 50mm above the horizontal plane. Draw the top and front views of the line and obtain the true length of the line. Also find the inclinations of the line with the two planes.	ME
180.	Draw the projections of a straight line AB, 100mm long, inclined at 45° to HP and 30° to VP. The end A is in HP and the end B is in VP. Find the shortest distance between the straight line AB and the line of intersection of planes of projection.	ME
181.	A line AB 100mm long is inclined to HP at 45° and inclined to VP at 30°. End A touches VP & HP. Draw front and top views of line and determine their lengths. Also determine the perpendicular distance of end B from both HP and VP.	ME
182.	The top view of a 75 mm long line AB measures 65 mm, while the front view is 50mm. The one end A is in the H.P and 12mm infront of the VP. Draw the projections of AB and determine its inclinations with the HP and the VP.	ME
183.	A line AB, 65mm long, has its end A 20mm above the HP and 25mm in front of the VP. The end B is 40 mm above the HP and 65mm in front of VP. Draw the projections of AB and show its inclination with the HP and the VP.	ME
184.	A Straight line PQ, 65mm long, is inclined at 45° to HP and 30° to VP. The point P is 70 mm from both the reference planes and the point Q is towards the reference planes. Draw the projections.	ME
185.	A point P is 40mm above HP and 20mm infront of VP another point Q is 20mm above HP and 50 mm in front of VP. The top view of line PQ is inclined at 30° to XY. Draw the projections.	ME
186.	The top view of a line PQ is 70mm and front view is 60mm long. The end Q is nearer to both HP and VP than the end P and is 15mm above HP and 20mm infront of VP. Draw the projections of line if the distance between projectors is 50mm.	ME
187.	A line AB 100mm long measures 80mm in front view and 70mm in top view the midpoint M of the line is 40 mm from both HP and VP. Draw its projection. Find the inclinations.	ME
188.	A line has its end A 15 mm above HP and 10mm infront of VP. The end B is 55mm above HP and the line is inclined at 30° to HP. The distance between the end projectors is 50mm. Draw the projections of line and determine the true length of the line and its inclination with VP.	ME
189.	A line MN 90mm long has a point P on it which divides the line in the ratio 2:1, i.e. MP: PN = 2:1. This point P is 50mm above HP and 60 mm infront of VP. The line is inclined at 35° to HP and 40 to VP. Draw the projection of line. Find the distance between end projector and the position of the ends of line with HP and VP	ME
190.	A straight line PQ inclined at 40° to VP has pq = 60mmand p'q'=50mm. The end P is	ME

	both in HP and VP, and 40 mm to the right of left profile plane. a) Draw the projections of the straight line PQ b) Draw the true length and true inclination with HP. c) Draw the profile view of the straight line. d) Find the position of the end Q with HP and VP.	
191.	A line has one end 30mm in front of VP and 15mm above HP and the other end is 15mm in front of VP and is above HP. Length of the line is 60mm. Top view of the line is 40mm long. Draw the two views of the line and obtain the inclination of the line with HP and VP.	ME
192.	The top view of the line PQ 75mm long measures 50mm.The end P is 30mm in front of VP and 15mm above HP. The ends Q is 15mm in front of VP and above HP. Draw the projections of the line and find its true inclinations with HP and VP. Find length of front view and distance between the end projectors.	ME
193.	A straight line AB measuring 80mm long has the end A in the HP and 25mm in front of the VP. Its midpoint M is 25mm above the HP and 40mm in front of the VP. Draw the projections of the line and determine the inclination of the line with HP and VP.	ME
194.	The front view of the line PQ 80mm long measures 50mm and it is inclined to XY at 50. One end of the line P is 20mm above HP and 25m in front of VP. Draw the front and top view of the line and find the inclinations of the line with HP and VP.	ME
195.	Draw the projections of a line AB 100mm long inclined at 45 to VP and 30 to HP. One end of the line is 20 mm above the HP and in the VP. Also determine the apparent length and inclinations.	ME
196.	Draw the projections of line PQ and find the true length and inclinations when the line is inclined at 30 to the HP and 45 to the VP. The line is having one of its end 15mm above HP and 20mm in front of VP. The distance between the end projectors on the XY line is 60mm.	ME
197.	The top view ab of a straight line AB is 60mm long and makes an angle 30 with the XY line. The end A is in VP and above 30mm HP. The end B is 65mm above HP. Draw the projections of the line AB and determine i) length of the front view. ii) Its true length and true inclinations with the reference plane.	ME
198.	A line AB 65mm long has its end A 25mm above HP and 30mm in front of VP. The other end is 45mm above HP and 50mm in front of VP. Draw the projections and determine its inclinations.	ME
199.	One end of a line is 30mm in front of VP and 30mm above HP. The line is inclined at 40 to HP and its top view measuring 60mm, is inclined at 50 to XY. Draw the projections of the line and determine true length and inclination with VP.	ME
200.	The top view of the line AB 80mm long, measures 65mm. The midpoint of the line is 30 mm in front of VP and 40mm above HP. The point A is in the VP. Draw the projections and find its inclinations.	ME
201.	A straight line PQ is inclined at 45 to HP and 30 to VP. The point P is in HP and the point Q is in VP. The length of the straight line is 65mm. Draw the projections of the straight line AB.	ME
202.	Draw the projections of a line AB 90mm long and find its true and apparent inclinations	ME

	with HP and VP, when its end A is on HP and 20mm in front of VP. Its midpoint M is 20mm above the HP and 40 mm in front of the VP.	
203.	A line PQ is inclined to both HP and VP by 30° and 45 respectively. One of its ends P is at a distance of 10mm from HP and 15mm from VP. The distance between the end projectors is 45mm. Draw the top and front views of the line. Determine the true length of the line and the distance of the end Q from VP and HP.	ME
204.	Two lines AB and AC make an angle of 120 between them in their front view and top view. AB is parallel to both the HP and the VP. Determine the real angle between AB and AC.	ME
205.	The elevation of a line AB 90mm long is inclined at 30° to HP and measures 70mm. The end A is 20mm above HP and is in VP. Draw the projections of the line and find its inclination with VP.	ME
206.	A line PQ measures 80mm in length. The point P is above HP and in front of VP by 10mm and 15mm respectively. The distance between the end projectors is 50mm. The line is inclined to HP by 30°. Draw the projections of the line and specify its true inclination with VP.	ME
207.	The top view of a line PQ 75mm long measures 50mm and the front view measures 60mm. The end P is 30mm above HP and 15 mm in front of VP. Draw the projections of the line and find its true inclinations with HP and VP. Find distance between the end projectors.	ME
208.	A straight line AB measuring 80mm long has the end A in the HP and 25mm in front of VP. Its midpoint M is 25 mm above HP and 40mm in front of VP. Draw the views of the line and determine the inclination of the line with HP and VP and also find distance between end projectors.	ME
209.	The end A of a line AB is in HP and 25mm in front of VP. The end B is in VP and 50mm above HP. The distance between the end projectors when measured parallel to the line of intersection of HP & VP is 65mm. Draw the projections of the line AB and determine its true length and true inclinations with HP & VP.	ME
210.	A line has its end A, 15mm from HP and 10mm from VP. The end B is 55 mm from HP and the line is inclined at 30□ to HP. The distance between the end projectors is 50 mm. Draw the projections of the line. Determine the true length of the line and its inclination with VP.	ME
211.	The end A of a line AB is in HP and 25mm in front of VP. The end B is 10mm in front of VP and 50mm above HP. The distance between the end projectors when measured parallel to the line of intersection of HP & VP is 80 mm. Draw the projections of the line AB and determine its true length and true inclinations with HP & VP.	ME
212.	A straight line PQ 80mm long appears to a length of 50mm and inclined at 30 to xy line in its side view. Draw its projection when its end point P is 15mm above HP and 60mm in front of VP. Point Q is nearer to VP than P.	ME
213.	The top view of a line AB, 80mm long measures 65mm and the length of the front view is 50mm. The end A is on HP and 15mm in front of VP. Draw the projectors.	ME
214.	Draw the projections of a line PQ and find its apparent lengths, true length and true inclination with HP when the line PQ has its end P 25mm above HP and 20mm in front of VP. The distance between the end projectors of the line when measured parallel to the	ME

	line of intersection of the HP & VP is 60mm. The end Q is 50mm above the HP and the line is inclined at 30 to the VP.	
215.	Find the true length and true inclination of a line AB with HP having one of its ends 20mm in front of VP and 30 mm above the HP. The line is inclined at 40° to VP and the left side view of the line is 60 mm long and inclined at 60° to X1Y1 line. Draw all the three views of the line.	ME
216.	An equilateral triangular lamina of 25mm side lies with one of its edges on HP such that the surface of the lamina is inclined to HP at 60°. The edge on which it rests is inclined to VP at 60°. Draw the projections.	ME
217.	An equilateral triangular lamina of 25mm side lies on one of its sides on HP. The lamina makes 45° with HP and one of its medians is inclined at 40° to VP. Draw its projections.	ME
218.	A triangular lamina of 25mm sides rests on one of its corners on VP such that median passing through the corner on which it rests is inclined to HP at 30° and lamina makes an angle 45deg with VP.draw its projections.	ME
219.	A triangular plane figure of sides 25mm is resting onHP with one of its corners, such that the surface of the lamina makes an angle of 60° with HP. If the side opposite to the corner on which the lamina rests makes an angle of 30° with VP, draw the top and front views in this position.	ME
220.	A triangular plane lamina of sides 25mm is resting on HP with one of its corners touching it, such that the side opposite to the corner on which it rests is 15mm above HP and makes an angle of 30° with VP. Draw the top and front views in this position. Also determine the inclination of the lamina to the reference plane.	ME
221.	A 30°-60° setsquare of 60mm longest side is so kept such that the longest side is in HP, making an angle of 30° with VP. The setsquare itself is inclined at 45° to HP. Draw the projections of the setsquare.	ME
222.	An isosceles triangular plate of negligible thickness has base 25mm long and altitude 35mm. it is so placed on HP such that in the front view it is seen as an equilateral triangle of 25mm sides with the side that is parallel to VP is inclined at 45° to HP. Draw its top and front views. Also determine the inclination of the plate with the reference plane.	ME
223.	A square lamina of 40mm side rests on one of its sides on HP. The lamina makes 30° to HP and the side on which it rests makes 45° to VP. Draw its projections.	ME
224.	A square plate of 30mm sides rests on HP such that one of the diagonals is inclined at 30° to HP and 45° to VP. Draw its projections.	ME
225.	A square lamina ABCD of 40mm side rests on corner C such that the diagonal AC appears to be 45° to VP. The two sides BC and CD containing the corner C make equal inclinations with HP. The surface of the lamina makes 30° with HP. Draw its top and front views.	ME
226.	The top views of a square lamina of side 30mm is a rectangle of sides 30mm X 20mm with the longer side of the rectangle being parallel to both HP & VP. Draw the top and front views of the square lamina. What is the inclination of the surface of the lamina with HP and VP?	ME
227.	A rectangular lamina of sides 20mm X 30mm rests on HP on one of its longer edges. The lamina is tilted about the edge on which it rests till its plane surface is inclined to HP at 45°. The edge on which it rests is inclined at 30° to VP. Draw the projections of the	ME

	lamina.	
228.	A rectangular lamina of 35mm X 20mm rests on HP on one of its shorter edges. The lamina is rotated about the edge on which it rests till it appears as a square in the top view. The edge on which the lamina rests being parallel to both HP & VP. Draw its projections and find its inclinations to HP and VP.	ME
229.	A rectangular lamina of 35mm X 20mm rests on HP on one its shorter edges. The lamina is rotated about the edge on which it rests till it appears as a square in the top view. The edge on which the lamina rests is inclined 30° to VP. Draw its projections and find its inclination to HP.	ME
230.	A rectangular lamina of 20mm X 25mm has as edge in HP and adjoining edge in VP, is tilted such that the front view appears as a rectangular of 20mm X 15mm. the edge, which is of VP, is 30mm from the right profile plane. (a) Draw the top view, front view and the left profile view in this position. (b) Find its inclinations with the corresponding principal planes.	ME
231.	The front view of a rectangular lamina of sides 30mm X 20mm sides. Draw the projections and determine the inclinations of the surface of the lamina with HP & VP.	ME
232.	A mirror 30mm X 40mm is inclined to the wall such that its front view is a square of 30mm side. The longer side of the mirror appears perpendicular to both HP and VP. Find the inclination of the mirror with the wall.	ME
233.	A rectangular plate of negligible thickness of size 35mm X 20mm has one of its shorter edges in VP with that edge inclined at 40 ° to HP. Draw the top view if its front view is square of side 20mm.	ME
234.	A pentagonal lamina of edges 25mm is resting on HP with one of its sides such that the surface makes an angle of 60° with HP. The edge on which it rests is inclined at 45° to VP. Draw its projections.	ME
235.	A pentagonal lamina of edges 25mm is resting on HP with one of its corners such that the plane surface makes an angle of 60°e with HP. The two of the edges containing the corner on which the lamina rests makes equal inclinations with HP. When the edge opposite this corner makes an angle of 45° with VP and nearer to the observer, draw the top and front views of the plane lamina in this position.	ME
236.	A pentagonal lamina of edges 25mm is resting on HP with one of its corners such that the edge opposite to this corner is s20mm above HP & makes an angle of 45° with VP. Draw the top and front views of the plane lamina in this position. Determine the inclination of the lamina	ME
237.	A pentagonal lamina of sides 25mm is resting on one of its edges on HP with the corner opposite to the edge touching VP. This edge is parallel to VP and the corner, which touches VP, is at a height of 15mm above HP. Draw the projections of the lamina and determines the inclinations of the lamina with HP and VP and the distance at which the parallel edge lies from VP.	ME
238.	A pentagonal lamina having edges 25mm is placed on one of its corners on HP such that the perpendicular bisector of the edge passing through the corner on which the lamina rests is inclined at 30 to HP and 45 VP. Draw the top and front views of the lamina.	ME
239.	A pentagonal lamina of sides 25mm is having a side both on HP and VP. The corner opposite to the side on which it rests is 15mm above HP. Draw the top front views of the	ME

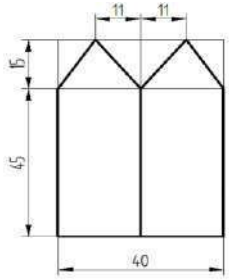
	lamina.	
240.	A pentagonal lamina of sides 25mm is having a side both on HP and VP. The surface of the lamina is inclined at an angle of 60 with HP. Draw the top and front views of the lamina.	ME
241.	A regular pentagonal lamina of 25mm side is resting on one of its corners on HP while the side opposite to this corner touches VP. If the lamina makes an angle of 60 with HP, draw the top and front views of the lamina.	ME
242.	A pentagonal lamina having edges 25mm is placed on one of its corners on HP such that the surface makes an angle 30 with HP and perpendicular bisector of the edge passing through the corner on which the lamina rests appears to be inclined at 30 to VP. Draw the top and front views of the lamina.	ME
243.	A regular pentagonal lamina of 25mm side is resting on one of its sides on HP while the corner opposite to this side touches VP. If the lamina makes an angle of 60 with HP, draw the projections of the lamina.	ME
244.	A pentagonal lamina of edges 25mm is resting on VP with one of its sides such that the surface makes an angle of 60 with VP. The edge on which it is inclined at 45 to HP. Draw its projections.	ME
245.	A pentagonal lamina having edges 25mm is placed on one of its corners on VP such that the surface makes an angle 30 with VP and perpendicular bisector of the edge passing through the corner on which the lamina rests appears to be inclined at 30 to HP. Draw the top and front views of the lamina.	ME
246.	A pentagonal lamina having edges 25mm is placed on one of its corners on VP such that the surface makes an angle 30 with VP and perpendicular bisector of the edge passing through the corner on which the lamina rests is inclined at 45 to HP. Draw the top and front views of the lamina.	ME
247.	A hexagonal lamina of 30mm sides rests on HP with one of its corners touching VP and surface inclined at 45 to it. One of its edges is inclined to HP at 30. Draw the front and top views of the lamina in its final position.	ME
248.	Draw the top and front views of a hexagonal lamina of 30mm sides having two of its edges parallel to both vertical and horizontal planes and one at its edges is 10mm from each of the planes of projection. The surface of the lamina is inclined at an angle of 60 to the HP.	ME
249.	A regular hexagonal lamina of sides 30mm is lying in such way that one of its sides touches both the reference planes. If the lamina makes 60 with HP, draw the projection of the lamina.	ME
250.	A regular hexagonal lamina of side 30mm is lying in such a way that one of its sides touches both the reference planes. If the side opposite to the side on which it rests is 45mm above HP, draw the projections of the lamina.	ME
251.	A regular hexagonal lamina of sides 25mm is laying in such a way that one of its sides on HP while the side opposite to the side on which it rests is on VP. If the lamina makes 60 to HP, draw the projections of the lamina.	ME
252.	A regular hexagonal lamina of side 25mm is lying in such a way that one of its corners on HP while the corner opposite to the corner on which it rests is on VP. If the lamina makes 60 to HP, draw the projections of the lamina.	ME

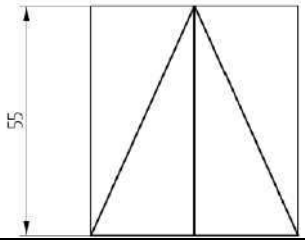
253.	A hexagonal lamina of side 30mm is resting on HP with one of its corners in VP and its surface inclined at an angle of 30 with VP. The diagonal passing through that corner which is in VP is inclined at 45 to HP. Draw the projections of the lamina.	ME
254.	A hexagonal lamina of side 30mm is resting onHP with one of its corners in VP and its surface inclined at an angle of 30 with VP. The diagonal passing through that corner which is in VP appears to be inclined at 40 to HP. Draw the projections of the lamina.	ME
255.	A hexagonal lamina of side 25mm rests on one of its sides on HP. The lamina makes 45 to HP and the side on which it rests makes 30 to VP. Draw its projections.	ME
256.	A hexagonal lamina of side 25mm rests on one of its corners on HP. The lamina makes 45 to HP and the diagonal passing through the corner on which it rest is inclined at 30 to VP. Draw its projections.	ME
257.	A hexagonal lamina of side 25mm rests on one of its corners on HP. The lamina makes 45 to HP and the diagonal passing through the corner on which it rest appears to be inclined at 30 to VP. Draw its projections.	ME
258.	A hexagonal lamina of side 25mm rests on one of its sides on VP. The lamina makes 45 to VP and the side on which it rests makes 45 to HP. Draw its projections.	ME
259.	A hexagonal lamina of side 25mm rests on one of its sides on VP. The side opposite to the side on which it rests is 30mm in front of VP & the side on which it rests makes 45 to HP. Draw its projections. Also determine the inclination of the lamina with the reference plane.	ME
260.	A hexagonal lamina of side 25mm rests on one of its corners on HP. The corner opposite to the corner on which it rests is 35mm above HP and the diagonal passing through the corner on which it rests is inclined at 30 to VP. Draw its projections. Find the inclination of the surface with HP.	ME
261.	Draw the projection of a circular plate of negligible thickness of 50mm diameter resting on HP on a point A on the circumference, with its plane incline at 45 to HP and the top view of the diameter passing through the resting point makes 60 with VP.	ME
262.	A circular lamina of 50mm diameter is standing with one of its points on the rim on HP and lamina inclined at 45 to HP. The diameter at right angles to the diameter which is passing through the point on which the lamina rests is parallel to VP. Draw its projections.	ME
263.	A circular lamina of 50mm diameter rests on HP such that one its diameters is inclined at 30 to VP and 45 to HP. Draw its top and front views in this position.	ME
264.	A circular lamina inclined to the VP appears in the front view as an ellipse of major axis 30mm and minor axis 15mm. the major axis is parallel to both HP and VP. One end of the minor axis is in both the HP and VP. Draw the projection of the lamina and determine the inclination of the lamina with the VP.	ME
265.	A circular lamina of 30mm diameter rest on VP such that one of its diameters is inclined at 30 to VP and HP. Draw its top and front views in this position.	ME
266.	A square prism 35mm sides of base and 65mm axis length rests on HP on one of its edges of the base which is inclined to VP at 30. Draw the projections of the prism when the axis is inclined to HP at 45.	ME
267.	A square prism 35mm sides of base and 60mm axis length rests on HP on one of its	ME

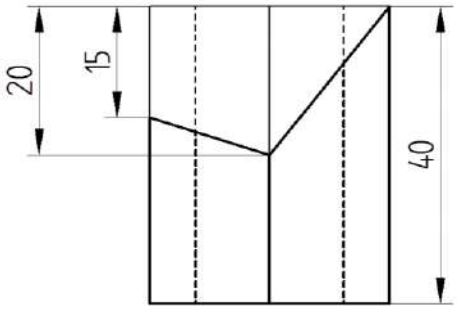
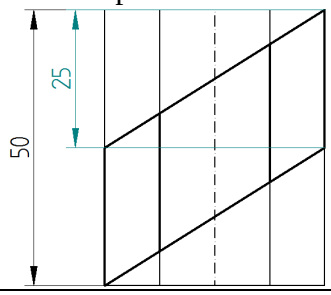
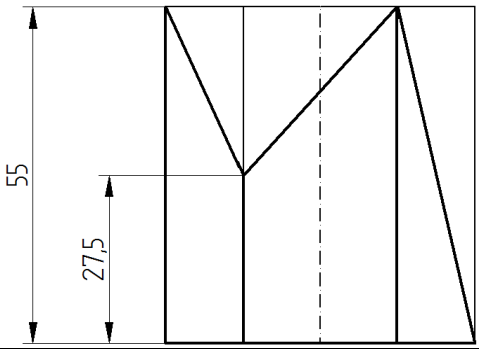
	corners of the base such that the two base edges containing the corner on which it rests make equal inclinations with HP. Draw the projections of the prism when the axis of the prism is inclined to HP at 40 and appears to be inclined to VP at 45.	
268.	A square prism 35mm sides of base and 60mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests make equal inclinations with HP. Draw the projections of the prism when the axis of the prism is inclined to HP at 40 and to VP at 30.	ME
269.	A square prism 35mm sides of base and 65mm axis length rests on HP on one of its edges of the base. Draw the projections of the prism when the axis is inclined to HP at 45 and VP at 30.	ME
270.	A pentagonal prism 25mm sides of the base and 60mm axis length rests on HP on one of its edges of the base which is inclined to VP at 30. Draw the projections of the prisms when the axis is inclined to HP at 40.	ME
271.	A pentagonal prism 25mm sides of the base and 60mm axis length rests on HP on one of its edges of the base. Draw the projections of the prisms when the axis is inclined to HP at 40 and VP at 30	ME
272.	A pentagonal prism 25mm sides of the base and 50mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests make equal inclinations with HP. Draw the projections of the prism when the axis of the prism is inclined to HP at 40 and appears to be inclined to VP at 45.	ME
273.	A pentagonal prism 25mm sides of the base and 50mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests make equal inclinations with HP. Draw the projections of the prism when the axis of the prism is inclined to HP at 40 and to VP at 30	ME
274.	A hexagonal prism 25mm sides of base and 50mm axis length rests on HP on one of its edges. Draw the projections of the prism when the axis is inclined at 45appears to be inclined to VP at 40.	ME
275.	A hexagonal prism 25mm sides of base and 50mm axis length rests on HP on one of its edges of the base. Draw the projections of the prism when the axis is inclined to HP at 45 and VP at 30.	ME
276.	A hexagonal prism 25mm sides of base and 50mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests makes equal inclinations with HP. Draw the projections of the prism when the axis of the prism is inclined to HP at 40 and appears to be inclined to VP at 45.	ME
277.	A hexagonal prism 25mm sides of base and 50mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests makes equal inclinations with HP. Draw the projections of the prism when the axis of the prism is inclined to HP at 40 and to VP at 30	ME
278.	A square prism 35mm sides of base and 60mm axis length is suspended freely from a corner of its base. Draw the projections of the prism when the axis appears to be inclined to VP at 45.	ME
279.	A pentagonal prism 25mm sides of the base and 50mm axis length is suspended freely from a corner of its base. Draw the projections of the prism when the axis appears to be inclined to VP at 45.	ME

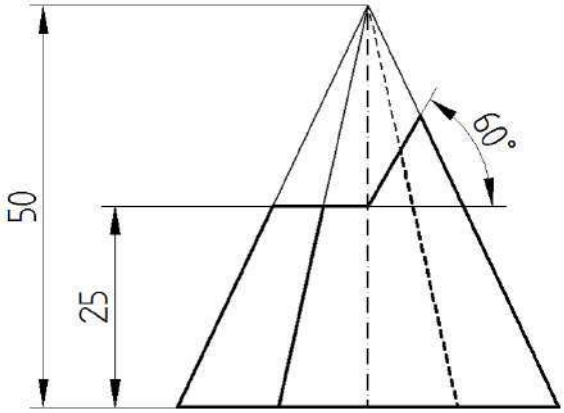
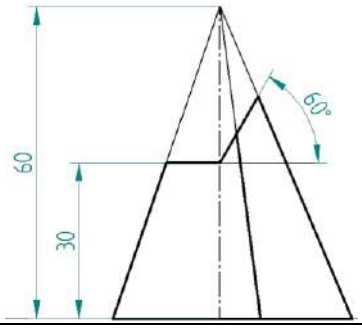
280.	A hexagonal prism 25mm sides of base and 50mm axis length is suspended freely from a corner of its base. Draw the projections of the prism when the axis appears to be inclined to VP at 45.	ME
281.	A square pyramid 35mm sides of base and 65mm axis length rests on HP on one of its edges of the base which is inclined to VP at 30. Draw the projections of the pyramid when the axis is inclined to HP at 45.	ME
282.	A square pyramid 35mm sides of base and 65mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests makes equal inclinations with HP. Draw the projections of the pyramid when the axis of the pyramid is inclined to HP at 40 and appears to be inclined to VP at 45.	ME
283.	A square pyramid 35mm sides of base and 60mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests makes equal inclinations with HP. Draw the projections of the pyramid when the axis of the pyramid is inclined to HP at 40 and to V at 30.	ME
284.	A square pyramid 35mm sides of base and 60mm axis length rests on HP on one of its edges of the base. Draw the projections of the pyramid when the axis is inclined to HP at 45 and VP at 30.	ME
285.	A pentagonal pyramid 25mm sides of base and 60mm axis length rests on HP on one of its edges of the base which is inclined to VP at 30. Draw the projections of pyramid when the axis is inclined to HP at 40.	ME
286.	A pentagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its edges of the base.Draw the projections of pyramid when the axis is inclined to HP at 45 and VP at 30.	ME
287.	A pentagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests make equal inclinations with HP. Draw the projections of the pyramid when the axis of the pyramid is inclined to HP at 40 and appeas to be inclined to VP at 45.	ME
288.	A pentagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests make equal inclinations with HP. Draw the projections of the pyramid when the axis of the pyramid is inclined to HP at 40 and to VP at 30.	ME
289.	A hexagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its edges of the base which is inclined to VP at 30°. Draw the projections of the pyramid when the axis is inclined to HP at 45	ME
290.	A hexagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its edges of the base. Draw the projections of the pyramid when the axis is inclined to HP at 45 and VP at 30.	ME
291.	A hexagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests make equal inclination with HP. Draw the projections of the pyramid when the axis of the pyramid is inclined to HP at 40 and appears to be inclined to VP at 45	ME
292.	A hexagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its corners of the base such that the two base edges containing the corner on which it rests make equal inclination with HP. Draw the projections of the pyramid when the axis of	ME

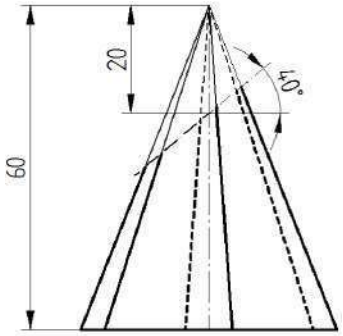
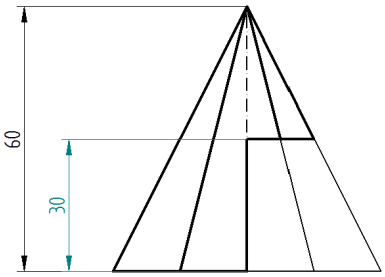
	the pyramid is inclined to HP at 40 and to VP at 30	
293.	A square pyramid 35mm sides of base and 60mm axis length is suspended freely from a corner of its base. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45.	ME
294.	A pentagonal pyramid 25mm sides of base and 50mm axis length is suspended freely from a corner of its base. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45.	ME
295.	A hexagonal pyramid 25mm sides of base and 50mm axis length is suspended freely from a corner of its base. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45.	ME
296.	A square pyramid 35mm sides of base and 60mm axis length rests on HP on one of its slant edges. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45.	ME
297.	A square pyramid 35mm sides of base and 60mm axis length rests on HP on one of its slant edges. Draw the projections of the pyramid when the axis is inclined to VP at 45.	ME
298.	A square pyramid 35mm sides of base and 60mm axis length rests on HP on one of its slant triangular faces. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45.	ME
299.	A square pyramid 35mm sides of base and 60mm axis length rests on HP on one of its slant triangular faces. Draw the projections of the pyramid when the axis is inclined to VP at 45.	ME
300.	A pentagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its slant edges. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45.	ME
301.	A pentagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its slant edges. Draw the projections of the pyramid when the axis is inclined to VP at 45.	ME
302.	A pentagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its slant triangular faces. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45.	ME
303.	A pentagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its slant triangular faces. Draw the projections of the pyramid when the axis is inclined to VP at 45.	ME
304.	A hexagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its slant edges. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45.	ME
305.	A hexagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its slant edges. Draw the projections of the pyramid when the axis is inclined to VP at 45.	ME
306.	A hexagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its slant triangular faces. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45.	ME
307.	A hexagonal pyramid 25mm sides of base and 50mm axis length rests on HP on one of its slant triangular faces. Draw the projections of the pyramid when the axis is inclined to VP at 45.	ME
308.	A cube 40mm sides rests on HP on an edge which is inclined to VP at 30. Draw the	ME

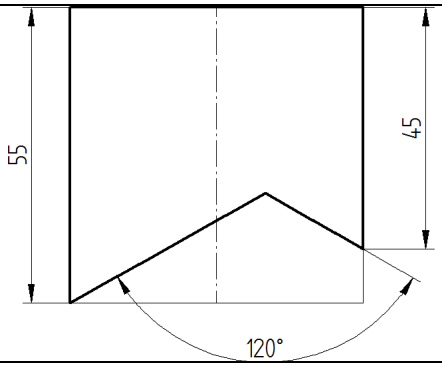
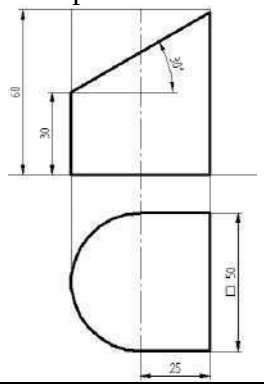
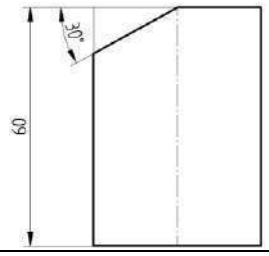
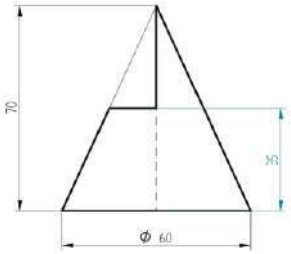
	projections when lateral square face containing the edge on which it rests makes an angle of 50 to HP.	
309.	A tetrahedron of 55mm sides rests on one of its corners such that an edge containing that corner is inclined to HP at 50 and VP at 30. Draw its projections.	ME
310.	A cone of 50mm base diameter and 60mm axis length rests on HP on one of its generators. Draw its projections when the axis is inclined to VP at 30.	ME
311.	A tetrahedron of sides 40mm is resting on one of its sides on HP. This side is parallel to VP and 40mm away from it. It is tilted about resting side such that the base containing this edge is inclined at 30.	ME
312.	A hexahedron of 30mm sides is resting on one of its corners on HP such that one of its solid diagonals is perpendicular to VP. Draw the projections of the solid.	ME
313.	A pentagonal prism of base side 25mm and height 50mm is resting on HP on one of its base corners such that the top most edge is at a distance of 60mm above HP. Draw its projections, when its top view of the axis is inclined at 45 to VP. Also, determine the inclination of the longer edge of the prism to HP which contains the resting corner.	ME
314.	A square pyramid of base sides 30mm and height 60mm is suspended by a thread tied to one of the corners of its base. It is then tilted such that the axis makes an angle of 45 with respect to the VP. Considering the apex of the solid to be nearer to the observer, draw the projections of the solid	ME
315.	A cone of base Φ 40mm axis length 50mm is resting on HP on a point on the circumference of its base such that its apex is at 40mm above the HP and its top view of the axis is inclined at 60 to VP. Draw the top and front views of the solid. Also, determine the inclinations of the axis when the base is nearer to the observer.	ME
316.	A Triangular Prism with one of its rectangular faces parallel to VP and nearer to it is cut as show in Figure. Draw the development of the retained portions of the prism which are shown in dark lines. 	ME
317.	A square prism of base side 30mm and axis length 60mm is resting on HP on its base with all the vertical faces being equally inclined to VP. It is cut by an inclined plane 600 to HP and perpendicular to VP and is passing through a point on the axis at a distance 15mm form its top face. Draw the development of the lower portion of the prism.	ME
318.	A square prism of base side 40mm and axis length 65mm is resting on HP on its base with all the vertical faces being equally inclined to VP. It is cut by an inclined plane 600 to HP and perpendicular to VP and is passing through a point on the axis at distance 15mm form the top face. Draw the development of the lower portion of the prism.	ME
319.	A square prism of 30mm side of the base and height 50mm is resting with its base on HP such that one of its vertical faces is inclined at 400 to VP. It is cut as shown in the following front view figure. Draw the development of the lateral surface of the prism.	ME

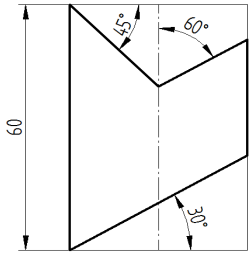
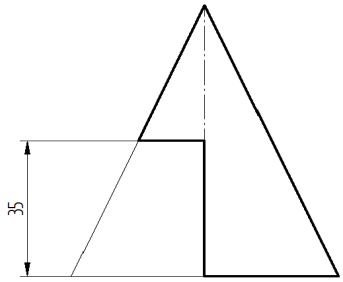
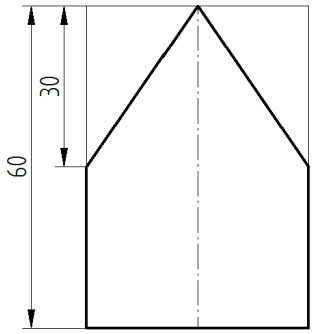
320.	A Cube of side 40mm is resting with its base on HP such that one of its vertical faces is inclined at 30 to VP. It is cut by a section plane perpendicular to VP, inclined to HP at an angle 45 and passes through the midpoint of the axis. Draw the development of the lower lateral surface of the cube.	ME
321.	A Square prism of base side 35mm & height 55mm rests with its base on HP and two faces equally inclined to VP. Draw the development of lateral surfaces of the retained portions of the cut prism shown by dark lines in the figure. 	ME
322.	A rectangular prism of base 40mm × 25mm and height 65mm rests on HP on its base with the longer base side inclined at 30 to VP. It is cut by a plane inclined at 40 to HP; perpendicular to VP cuts the axis at its mid height. Draw the development of the remaining portion of the prism.	ME
323.	A rectangular prism of base 30mm × 20 mm and height 60mm rests on HP on its base with the longer base side inclined at 40 to VP. It is cut by plane inclined at 45 to HP, perpendicular to VP and bisects the axis. Draw the development lateral surface of prism.	ME
324.	A rectangular prism of base size 25mm × 40mm and axis length 65mm is resting on HP on its base with the longer side of the base inclined at 30 to VP. It is cut by a plane inclined at 40 to HP and perpendicular to VP and passes through extreme left corner of base. Draw the development of the lateral surface of the remaining portion of the prism.	ME
325.	Draw the development of the truncated portion of lateral faces of a pentagonal prism of 20mm sides of base and 50mm height standing vertically with one of its rectangular faces parallel to VP and nearer to it so as to produce a one piece development. The inclined face of truncated prism is 30 to its axis and passes through the right extreme corner of the top face of the prism.	ME
326.	A regular pentagonal prism of height 60mm and base edge 30mm rests with its base on HP. The vertical face closest to VP is 30 to it. Draw the development of truncated prism with its truncated surface inclined at 60 to its axis and bisecting it.	ME
327.	A pentagonal prism of 30mm side of base and height 50mm lies with its base on HP such that one of the rectangular faces is inclined at 40 to VP. It is cut to the shape of a truncated pyramid with the truncated surface inclined at 30° to the axis so as to pass through a point on it 30mm above the base. Develop the truncated portion of the prism so as to produce a one piece development.	ME
328.	A pentagonal prism of base sides 30mm and axis length 60mm rests with its base on HP and an edge of the base inclined at 45 to VP. It is cut by plane perpendicular to VP, inclined at 40 to HP and passing through a point on axis, at distance of 30mm from the base. Develop the remaining surfaces of the truncated prism.	ME
329.	A pentagonal prism of base sides 20 mm and height 40 mm is resting with its base on HP with a base edge parallel to VP. The prism is cut as shown in the following front view.	ME

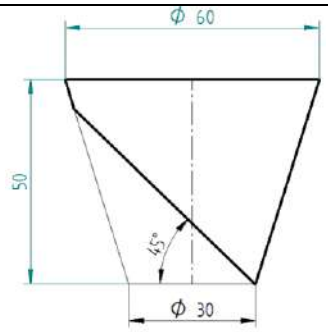
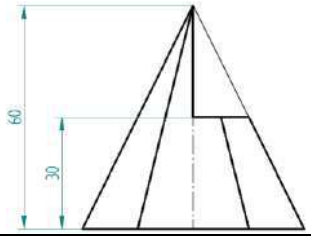
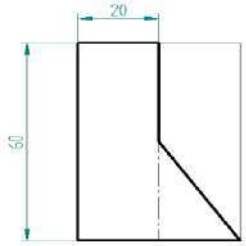
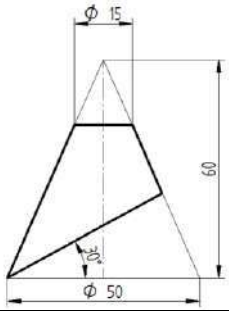
	Draw the development of lateral surface of prism. 	
330.	A hexagonal prism of base side 20mm and height 50mm is resting on HP on its base, such that one of its base edge is parallel to VP. The prism is cut in this position as shown in following front view. Draw the development of lateral surface of prism. 	ME
331.	A hexagonal prism of base side 25mm and height 55mm is resting on HP on its base, such that one of the base edges is parallel to VP. The prism is cut in this position as shown in the following front view. Draw the development of the lateral surface of the prism. 	ME
332.	The inside of a hopper of a flour mill is to be lined with thin sheet. The top and bottom of the hopper are regular pentagons with each side equal to 30mm and 22.5mm respectively. The height of hopper is 30mm. Draw the shape of the sheet to which it is to be cut so as to fit into the hopper.	ME
333.	A square pyramid of side of base 45mm, altitude 70mm is resting with its base on HP with two sides of the base parallel to VP. The pyramid is cut by a section plane which is perpendicular to VP and inclined at 40 to the HP. The cutting plane bisects the axis of the pyramid. Obtain the development of the lateral surfaces of the truncated pyramid.	ME
334.	A square pyramid base 40mm side and axis 65mm long has its base on HP and all the edges of the base are equally inclined to VP. It is cut by an inclined section plane so as the truncated surface at 45 to its axis, bisecting it. Draw the development of the truncated	ME

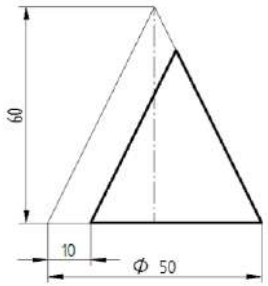
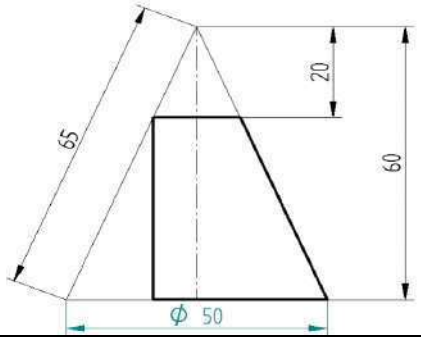
	pyramid.	
335.	A frustum of a square pyramid has its base 40mm sides, top 16mm sides and height 60mm, its axis is vertical and a side of its base is parallel to VP. Draw the projections of the frustum and show the development of lateral surfaces of it.	ME
336.	A square pyramid of 25mm base edge and 50mm height rests with its base on HP with its entire base edges equally inclined to VP. It is cut by plane perpendicular to VP and inclined to HP at 60, passing through the extreme right corner of base. Draw the development of lateral surface of pyramid.	ME
337.	A rectangular pyramid, side of base 25 mm × 40 mm and height 50mm has one of the sides of the base inclined at 30 to VP. Draw the development of the lateral surface of the cut pyramid, whose front view shown below. 	ME
338.	A frustum of a pentagonal pyramid, smaller base sides 16mm and bigger top face sides 32mm and height 40 mm, is resting on the HP on its smaller base, with one of its base sides parallel to VP. Draw the projections of the frustum and develop the lateral surface of it.	ME
339.	A regular pentagonal pyramid of side of base 35mm and altitude 65mm has its base on HP with a side of base perpendicular to VP. The pyramid is cut by section plane which is perpendicular to VP and inclined at 30 to HP. The cutting plane meets the axis of the pyramid at a point 30mm below the vertex. Obtain the development of the remaining part of the pyramid.	ME
340.	A pentagonal pyramid, 30mm sides, with a side of base perpendicular to VP. Draw the development of the lateral surfaces of the retained portion of the pyramid shown by the dark lines in the following figure. 	ME
341.	A pentagonal pyramid 30mm edges of base and 50mm height rests vertically with one of	ME

	its base edges parallel to VP and nearer to it. It is cut as shown in the following figure. Draw the development of the lateral surfaces of the upper portion of the pyramid.	
342.	A hexagonal pyramid, base sides 25mm and height 60mm, is resting with its base on HP and an edge of base inclined at 40 to VP. It is cut to the shape of a truncated pyramid with the truncated surface indicated in the front view at a point on the axis 20mm from the apex and inclined at 40 to XY. Draw the projections and show the development of the lateral surface of the remaining portion of the pyramid. 	ME
343.	A hexagonal pyramid of sides 35mm and altitude 65mm is resting on HP on its base with two of the base sides perpendicular to VP. The pyramid is cut by a plane inclined at 30 to HP and perpendicular to VP and is intersecting the axis at 30mm above the base. Draw the development of the remaining portion of the pyramid.	ME
344.	A hexagonal pyramid 25mm side of base and axis 65mm long is resting on its base on HP with one of the edges of the base parallel to VP. It is cut by a vertical section plane at a distance of 8mm from the axis towards right side. Develop the lateral surface of the left part of pyramid.	ME
345.	A hexagonal pyramid of 30mm base sides with a side of base parallel to VP. Draw the development of the lateral surfaces of the retained portions of the pyramid cut by two perpendicular planes shown by dark lines in the figure. 	ME
346.	A vertical cylinder of base diameter 45mm and axis length 60mm is cut by a plane perpendicular to VP and inclined at 50 to HP, is passing through the center point of the top face. Draw the development of the lateral surface of the cylinder.	ME
347.	Following figure shows the front view of a model of a steel chimney of diameter 54 mm made from a flat thin sheet metal fitted over an inclined plane roof. Develop the portion of the chimney.	ME

		
348.	A vertical cylinder of base diameter 50mm and axis length 60mm is cut by two planes which are perpendicular to VP and inclined at 45 to HP and passing through either side from the center point of the top face. Draw the development of the lateral surface of the cylinder.	ME
349.	A pipe made of using a half tubular (circular) with a half square in shape is cut as shown in the following figure. Draw the development of the lateral surface of the object. 	ME
350.	Develop the lateral surface of the cylinder of 40mm diameter and height 60mm which is cut in the following way. 	ME
351.	A cone of base diameter 60mm and height 70mm is resting on its base on HP. It is cut as shown in the following figure. Draw the development of the lateral surface of the remaining portion of the cone. 	ME

352.	Develop the lateral surface of the cylinder of 40mm diameter and height 60mm which is cut in the following way. 	ME
353.	A cone of base diameter 60mm and height 70mm is resting on its base on HP. It is cut as shown in the following figure. Draw the development of the lateral surface of the remaining portion of the cone. 	ME
354.	Draw the Development of the lateral surface of a truncated vertical cylinder, 40mm diameter of base and height 50 mm, the truncated flat surface of the cylinder bisects the axis at 60 to it.	ME
355.	Develop the lateral surface of the cylinder of 40mm diameter and height 60mm cut in the following way. 	ME
356.	A right cone of 60mm diameter of base and 75mm height stands on its base on HP. It is cut to the shape of a truncated cone with its truncated surface inclined at 45 to the axis lying at a distance of 40 mm from the apex of the cone. Obtain the development of the lateral surface of the truncated cone.	ME
357.	Draw the development of following truncated cone.	ME

		
358.	A hexagonal pyramid of 30mm sides of base with a side of base parallel to VP. Draw the development of the lateral surface of the retained portion of the pyramid which is shown by dark lines in the following figure 	ME
359.	Develop the lateral surface of the cylinder of 40mm diameter and height 60mm which is cut in the following way 	ME
360.	Draw the Development of the lateral surface of the cone, whose front view is as shown in the following figure. 	ME
361.	A cone of base diameter 50mm and height 60mm is resting with its base on HP. It is cut, as shown in the following front view of which is as shown in figure. Draw the development of the lateral surface of it.	ME

		
362.	Draw the development of the lateral surface of a funnel consisting of a cylinder and a frustum of a cone. The diameter of the cylinder is 20mm and top face diameter of the funnel is 80mm. The height of frustum and cylinder are equal to 60mm and 40mm respectively.	ME
363.	Draw the Development of the lateral surface of the cut cone, whose front view is shown in following figure. 	ME
364.	A funnel is to be made of sheet metal. The funnel tapers from 40mm to 20mm diameter to a height of 20mm and from 20mm to 15mm diameter, for the next 20mm height. The bottom of the funnel is beveled off to a plane inclined at 45 to the axis. Draw the development of the funnel.	ME
365.	A funnel is made of sheet metal. The funnel tapers from 60 mm to 30 mm diameter to a height of 25mm and then forms to a cylinder with a height of 50 mm. Bottom of funnel is beveled off completely at an angle of 450 to axis. Draw the development of funnel.	ME
366.	Conduct experiment to test diode clipping(single/double ended) and clamping circuits(positive/negative)	EC
367.	Half wave Rectifier and Full wave Rectifier with and without filter and measure the ripple factor.	EC
368.	Characteristics of Zener diode and design a simple Zener voltage regulator to determine line and load regulation.	EC
369.	Characteristics of LDR and photodiode and to turn on an LED using LDR.	EC
370.	Static Characteristics of SCR.	EC

371.	SCR controlled HWR and FWR using RC triggering circuit.	EC
372.	Conduct an experiment to measure temperature in terms of current/voltage using a temperature sensor bridge.	EC
373.	Measurement of Resistance using wheatstone's bridge and kelvin's bridge.	EC
374.	Input and output characteristics of BJT Emitter configuration and Evaluation of Parameters.	EC
375.	Transfer and drain characteristics of a JFET and MOSFET.	EC
376.	UJT triggering circuits for Controlled Rectifiers,.	EC
377.	Design and simulation of Regulated Power supply.	EC
378.	Verify (a) Demorgan's Theorem for 2 variables. (b) The sum -of product and product -of-sum expressions using universal gates.	EC
379.	Design and implement (a) Half Adder & Full Adder using (i) basic logic gates and (ii) NAND gates. (b) Half Subtractor & Full subtractor using (i) basic logic gates and (ii) NANAD gates	EC
380.	Design and implement of (a) 4-bit Parallel Adder/ Subtractor using IC 7483. (b) BCD to Excess-3 code conversion and vice versa.	EC
381.	Design and Implementation of (a) 1-bit Comparator. (b) 5-bit Magnitude Comparator using IC 7485.	EC
382.	Realize (a) Adder & Subtractors using IC 74153. (b) 4-variable function using IC 74151(8:1MUX).	EC
383.	Realize (a) Adder & Subtractors using IC74139. (b) Binary to Gray code conversion & vice versa (IC74139).	EC

384.	Realize the following flip/flops using NAND gates. Master-Slave JK, D & T Flip-Flop.	EC
385.	Realize the following shift registers using IC7474/IC 7495 (a)SISO (b) SIPO (c) PISO (d) PIPO (e) Ring and (f) Johnson counter.	EC
386.	Realize (i) Design Mod-N Synchronous Up counter & Down Counter using 7476 JK F/F. (ii) Mod-N Asynchronous Counter using IC7490/7476. (ii) Mod-N Synchronous counter using IC74192.	EC
387.	Design Pseudo Random Sequence generator using 7495.	EC
388.	Design binary multiplier and simulate using simulation tool.	EC
389.	**Programs involving:** Data transfer instructions like: Block Move, Exchange, Sorting, Finding largest element in an array.	EC
390.	**Programs involving:** Arithmetic & logical operations like: Addition/subtraction, multiplication and division, square, Cube – (16 bits Arithmetic operations – bit addressable).	EC
391.	Counters.	EC
392.	Boolean & Logical Instructions (Bit manipulations).	EC
393.	Conditional CALL & RETURN.	EC
394.	Code conversion: BCD – ASCII; ASCII – Decimal; Decimal - ASCII; HEX - Decimal and Decimal -HEX.	EC
395.	Programs to generate delay, Programs using serial port and on-Chip timer/counter.	EC
396.	Interface a simple toggle switch to 8051 and write an ALP to generate an interrupt which switches on an LED (i) continuously as long as switch is on and (ii) only once for a small time when the switch is turned on.	EC
397.	Write a C program to (i) transmit and (ii) to receive a set of characters serially by interfacing 8051 to a terminal.	EC
398.	Write ALPs to generate waveforms using ADC interface.	EC

399.	Write ALP to interface an LCD display and to display a message on it.	EC
400.	Write ALP to interface a Stepper Motor to 8051 to rotate the motor.	EC
401.	Design and setup the Common Source JFET/MOSFET amplifier and plot the frequency response.	EC
402.	Design and set up the BJT common emitter voltage amplifier with and without feedback and determine the gain- bandwidth product, input and output impedances.	EC
403.	Design and set-up BJT/FET i) Colpitts Oscillator, and ii) Crystal Oscillator	EC
404.	Design active second order Butterworth low pass and high pass filters.	EC
405.	Design Adder, Integrator and Differentiator circuits using Op-Amp	EC
406.	Test a comparator circuit and design a Schmitt trigger for the given UTP and LTP values and obtain the hysteresis.	EC
407.	Design 4 bit R – 2R Op-Amp Digital to Analog Converter (i) using 4 bit binary input from toggle switches and (ii) by generating digital inputs using mod-16 counter.	EC
408.	Design Monostable and a stable Multivibrator using 555 Timer.	EC
409.	RC Phase shift oscillator and Hartley oscillator Simulation using PSpice	EC
410.	Narrow Band-pass Filter and Narrow band-reject filter Simulation using PSpice	EC
411.	Precision Half and full wave rectifier Simulation using PSpice	EC
412.	Monostable and A stable Multivibrator using 555 Timer Simulation using PSpice	EC
413.	Verification of sampling theorem (use interpolation function).	EC
414.	Linear and circular convolution of two given sequences, Commutative, distributive and associative property of convolution.	EC
415.	Auto and cross correlation of two sequences and verification of their properties	EC
416.	Solving a given difference equation.	EC
417.	Computation of N point DFT of a given sequence and to plot magnitude and	EC

	phase spectrum (using DFT equation and verify it by built-in routine).	
418.	(i) Verification of DFT properties (like Linearity and Parsevals theorem, etc.) (ii) DFT computation of square pulse and sinc function etc.	EC
419.	Design and implementation of Low pass and High pass FIR filter to meet the desired specifications (using different window techniques) and test the filter with an audio file. Plot the spectrum of audio signal before and after filtering.	EC
420.	Design and implementation of a digital IIR filter (Low pass and High pass) to meet given specifications and test with an audio file. Plot the spectrum of audio signal before and after filtering.	EC
421.	Obtain the Linear convolution of two sequences using DSP kit	EC
422.	Compute Circular convolution of two sequences using DSP kit	EC
423.	Compute the N-point DFT of a given sequence using DSP kit	EC
424.	Determine the Impulse response of first order and second order system using DSP kit	EC
425.	Generation of Sine wave and standard test signals using DSP kit	EC
426.	Write Verilog program for the following combinational design along with test bench to verify the design: a. 2 to 4 decoder realization using NAND gates only (structural model) b. 8 to 3 encoder with priority and without priority (behavioural model) c. 8 to 1 multiplexer using case statement and if statements d.4-bit binary to gray converter using 1-bit gray to binary converter 1-bit adder and subtractor	EC
427.	Model in Verilog for a full adder and addfunctionality to perform logical operations of XOR, XNOR,AND and OR gates. Write test bench with appropriate input patterns to verify the modelled behaviour.3. Write a Verilog/VHDL code to describe the functions of a Full Adder Using three modeling styles.	EC
428.	Verilog 32-bit ALU shown in figure below and verify the functionality of ALU by selecting appropriate test patterns. The functionality of the ALU is presented in Table 1.	EC

a. Write test bench to verify the functionality of the ALU considering all possible input patterns

b. The enable signal will set the output to required functions if enabled, if disabled all the outputs are set to tri-state

c. The acknowledge signal is set high after every operation is completed

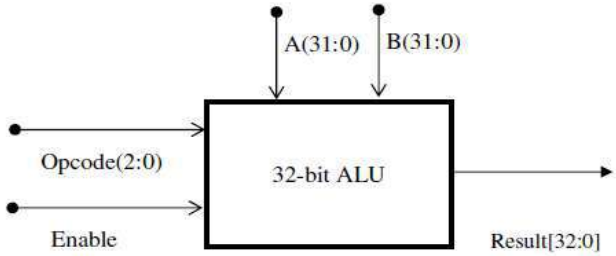


Figure 1 ALU top level block diagram

Opcode(2:0)	ALU Operation	Remarks	
000	A + B	Addition of two numbers	Both A and B are in two's complement format
001	A – B	Subtraction of two numbers	
010	A + 1	Increment Accumulator by 1	A is in two's complement format
011	A - 1	Decrement accumulator by 1	
100	A	True	Inputs can be in any format
101	A Complement	Complement	
110	A OR B	Logical OR	
111	A AND B	Logical AND	

Table 1 ALU Functions

429.	Write Verilog code for SR, D and JK and verify the flip flop.	EC
430.	Write Verilog code for 4-bit BCD synchronous counter.	EC
431.	Write Verilog code for counter with given input clock and check whether it works as clock divider performing division of clock by 2, 4, 8 and 16. Verify the functionality of the code.	EC
432.	Write a Verilog code to design a clock divider circuit that generates 1/2, 1/3rd and 1/4thclock from a given input clock. Port the design to FPGA and validate the functionality through oscilloscope.	EC
433.	Interface a DC motor to FPGA and write Verilog code to change its speed and direction.	EC
434.	Interface a Stepper motor to FPGA and write Verilog code to control the Stepper motor rotation which in turn may control a Robotic Arm. External switches to be used for different controls like rotate the Stepper motor (i) +N steps if Switch no.1 of a Dip	EC

	switch is closed (ii) +N/2 steps if Switch no. 2 of a Dip switch is closed (iii) –N steps if Switch no. 3 of a Dip switch is closed etc.	
435.	Interface a DAC to FPGA and write Verilog code to generate Sine wave of frequency F KHz (eg.200 KHz) frequency. Modify the code to down sample the frequency to F/2 KHz. Display the Original and Down sampled signals by connecting them to an oscilloscope.	EC
436.	Write Verilog code using FSM to simulate elevator operation.	EC
437.	Write Verilog code to convert an analog input of a sensor to digital form and to display the same on a suitable display like set of simple LEDs, 7-segment display digits or LCD display.	EC
438.	ALP to write data to RAM	EC
439.	Display "Hello World" message using Internal UART (using LPC7168)	EC
440.	Interface and Control a DC Motor (using LPC7168)	EC
441.	Interface a Stepper motor and rotate it in clockwise and anti-clockwise direction (using LPC7168)	EC
442.	Interface a DAC and generate Triangular and Square waveforms (using LPC7168)	EC
443.	Interface a 4x4 keyboard and display the key code on an LCD (using LPC7168)	EC
444.	Demonstrate the use of an external interrupt to toggle an LED On/Off (using LPC7168)	EC
445.	Display the Hex digits 0 to F on a 7-segment LED interface, with an appropriate delay in between (using LPC7168)	EC
446.	Measure ambient temperature using a sensor and SPI ADC IC(using LPC7168)	EC
447.	Frequency modulation and demodulation(IC8038/2206 can be used)	EC
448.	Pulse sampling ,flat top sampling and reconstruction	EC
449.	Time Division Multiplexing and Demultiplexing of two band limited signals.	EC
450.	FSK and PSK generation and detection	EC
451.	Measurement of frequency, guide wavelength, power, VSWR and attenuation in	EC

	microwave test bench.	
452.	ObtaintheRadiationPatternandMeasurementofdirectivityandgainofmicrostripdipolean dYagi antennas.	EC
453.	Determination of a. Coupling and isolation characteristics of micro strip directional coupler. b. Resonance characteristics of micro strip ring resonator and computation of dielectric constant of the substrate. Power division and isolation of micro strip power divider	EC
454.	Simulate NRZ, RZ, half-sinusoid and raised cosine pulses and generate eye diagram for binary polar signaling.	EC
455.	Pulse code modulation and demodulation system..	EC
456.	Computations of the Probability of bit error for coherent binary ASK, FSK and PSK for an AWGN Channel and Compare them with their Performance curves. Digital Modulation Schemes i) DPSK Transmitter and receiver, ii) QPSK Transmitter and Receiver	EC
457.	Implementapointtopointnetworkwithfournodesandduplexlinksbetweenthem.Analy ze the network performance by setting the queue size and varying the bandwidth.	EC
458.	Implementafournodepointtopointnetworkwithlinksn0-n2,n1-n2andn2-n3.ApplyTCPagentbetween n0-n3 and UDP between n1-n3. Apply relevant applications over TCP and UDP agents changing the parameter and determine the number of packets sent by TCP/UDP.	EC
459.	Implement Ethernet LAN using n (6-10) nodes. Compare the throughput by changing the error rate and data rate.	EC
460.	Implement Ethernet LAN using n nodes and assign multiple traffic clothe nodes and obtain congestion window for different sources/ destinations.	EC
461.	Implement ESS with transmission nodes in Wireless LAN and obtain the performance parameters.	EC

462.	Implementation of Link stator outing algorithm.	EC
463.	Write a program for a HLDC frame toper form the following. 1. Bit stuffing 2. Character stuffing.	EC
464.	Write a program for distance vector algorithm to find suitable path for transmission.	EC
465.	Implement Dijkstra's algorithm to compute the shortest routing path.	EC
466.	For the given data, use CRC-CCITT polynomialtoobtain CRC code. Verify the program for the cases 1.Without error 2. With error	EC
467.	Implementation of Stop and Wait Protocol and Sliding Window Protocol	EC
468.	Write a program for congestion control using leaky bucket algorithm	EC
469.	Capture the schematic of CMOS inverter with load capacitance of 0.1pF and set the widths of inverter with Wn = Wp,Wn =2Wp, Wn =Wp/2 and length at selected technology	EC
470.	Draw layout of inverter with Wp/Wn = 40/20, use optimum layout methods. Verify for DRC and LVS, extract parasitic and perform post layout simulations, compare the results with pre- layout simulations. Record The observations.	EC
471.	Capture the schematic of 2-input CMOS NAND gate having similar delay as that of CMOS inverter computed in experiment 1. Verify the functionality of NAND gate and also find out the delay td for all four possible combinations of input vectors. Table the results. Increase the drive strength to 2X and 4X and tabulate the results.	EC
472.	Draw layout of NAND withWp/Wn=40/20,use optimum layout methods .Verify for DRC and LVS, Extract parasitic and perform post layout simulations, compare the results with pre-layout simulations. Record the observations	EC
473.	Capture schematic of Common Source Amplifier with PMOS Current Mirror Load and find its transient response and AC response? Measures the Unity Gain Band width (UGB), amplification factor by varying transistor geometries, study the impact of variation in width to UGB.	EC
474.	Draw layout of common source amplifier, use optimum layout methods. Verify for	EC

	DRC and LVS, extract parasitic and perform post layout simulations, compare the results with pre-layout simulations. Record the observations.	
475.	Capture schematic of two-stage operational amplifier and measure the following: UGB dB bandwidth Gain margin and phase margin with and without coupling capacitance	EC
476.	Forthesynthesizednetlistcarryoutthefollowingforanytwoaboveexperiments: 1.Floor planning(automatic),identify the placement of pads 2.Placement and Routing, record the parameters such as no. of layers used for routing, flip method for placement of standard cells, placement of standard cells, routes of power and ground, and routing of standard cells	EC
477.	Amplitude Modulation and Demodulation of (a) Standard AM and (b) DSBSC (LM741 and LF398 ICs can be used)	EC
478.	Frequency modulation and demodulation	EC
479.	Design and test Time Division Multiplexing and Demultiplexing of two band limited signals.	EC
480.	Design and test i) Pulse sampling, flat top sampling and reconstruction. ii) Pulse amplitude modulation and demodulation.	EC
481.	Design and test BJT/FET Mixer	EC
482.	Phase locked loop Synthesis	EC
483.	Illustration of (a) AM modulation and demodulation and display the signal and its spectrum. (b) DSB-SC modulation and demodulation and display the signal and its spectrum. (Use MATLAB/SCILAB)	EC
484.	Illustration of FM modulation and demodulation and display the signal and its spectrum. (Use MATLAB/SCILAB)	EC
485.	Illustrate the process of sampling and reconstruction of low pass signals. Display	EC

	the signals and its spectrums of both analog and sampled signals. (Use MATLAB/SCILAB).	
486.	Illustration of Delta Modulation and the effects of step size selection in the design of DM encoder. (Use MATLAB/SCILAB)	EC
487.	To realize using op-amp an Inverting Amplifier and Non-Inverting Amplifier using simulation tool (Ps pice)	EC
488.	To realize using op-amps i) Summing Amplifier ii)Difference amplifier using simulation tool (Ps pice)	EC
489.	To realize using op-amps an Instrumentation Amplifier using simulation tool (Ps pice)	EC
490.	To realize using op-amps i) Differentiator ii)Integrator using simulation tool (Ps pice)	EC
491.	To realize using op-amps a Full wave Precision Rectifier using simulation tool (Ps pice)	EC
492.	To realize using op-amps using simulation tool using simulation tool (Ps pice) Inverting and Non-Inverting Zero Crossing Detectors Positive and Negative Voltage level detectors	EC
493.	To realize using op-amp an Inverting Schmitt Trigger using simulation tool (Ps pice)	EC
494.	To realize using op-amp an Astable Multivibrator using simulation tool (Ps pice)	EC
495.	To design and implement using op-amps using simulation tool (Ps pice) Butterworth I & II order Low Pass Filter Butterworth I & II order High Pass Filter	EC
496.	To design and implement using op-amp a RC Phase Shift Oscillator using simulation tool (Ps pice)	EC
497.	To design and implement Mono-stable Multivibrator using 555 timer using simulation tool (Ps pice)	EC
498.	To design and implement 4 - bit R-2R Digital to Analog Converter using simulation tool (Ps pice)	EC
499.	Open Circuit and Short circuit tests on single phase step up or step down transformer and predetermination of (i) Efficiency and regulation (ii) Calculation of parameters of	EEE

	equivalent circuit	
500.	Sumpner's test on similar transformers and determination of combined and individual transformer efficiency.	EEE
501.	Parallel operation of two dissimilar single-phase transformers of different kVA and determination of load.	EEE
502.	Polarity test and connection of 3 single-phase transformers in star – delta and determination of efficiency and regulation under balanced resistive load.	EEE
503.	Comparison of performance of 3 single-phase transformers in delta – delta and V – V (open delta) connection under load	EEE
504.	Scott connection with balanced and unbalanced loads.	EEE
505.	Separation of hysteresis and eddy current losses in single phase transformer.	EEE
506.	Voltage regulation of an alternator by EMF and MMF methods.	EEE
507.	Voltage regulation of an alternator by ZPF method.	EEE
508.	Power angle curve of synchronous generator or Direct load test on three phase synchrous generator to determine efficiency and regulation	EEE
509.	Slip test – Measurement of direct and quadrature axis reactance and predetermination of regulation of salient pole synchronous machines.	EEE
510.	Performance of synchronous generator connected to infinite bus, under constant power and variable excitation & vice - versa.	EEE
511.	Investigate the voltage and current ratios of a multi-tapped transformer and verify the ideal transformer ratio.	EEE
512.	Power angle curve of synchronous generator or Direct load test on three phase synchronous generator to determine efficiency and regulation.	EEE
513.	Model transformer in Simscape for Automatic Voltage Regulation.	EEE
514.	Simulate power angle curve of generator in MATLAB.	EEE
515.	Design and Testing of Full wave – centre tapped transformer type and Bridge type rectifier circuits with and without Capacitor filter. Determination of ripple factor, regulation and efficiency.	EEE
516.	Static Transistor characteristics for CE, CB and CC modes and determination of h parameters	EEE
517.	Frequency response of single stage BJT and FET RC coupled amplifier and determination of half power points, bandwidth, input and output impedances.	EEE
518.	Design and testing of BJT -RC phase shift oscillator for given frequency of oscillation.	EEE
519.	Determination of gain, input and output impedance of BJT Darlington emitter follower with and without bootstrapping.	EEE
520.	Simplification, realization of Boolean expressions using logic gates/Universal gates	EEE
521.	Realization of Half/Full adder and Half/Full Subtractors using logic gates.	EEE
522.	Realization of parallel adder/Subtractors using 7483 chip- BCD to Excess-3 code conversion and Vice - Versa.	EEE
523.	Realization of Binary to Gray code conversion and vice versa.	EEE
524.	Design and testing Ring counter/Johnson counter.	EEE
525.	Design and testing of Sequence generator.	EEE
526.	Realization of 3 bit counters as a sequential circuit and MOD – N counter design using 7476, 7490, 74192,	EEE

527.	Experiments on clippers and clampers.	EEE
528.	Verifying its logic operation and obtaining its truth table of flip –flops: RS and JK.	EEE
529.	Design, simulation (MATLAB) and testing of Wien bridge oscillator for given frequency of oscillation	EEE
530.	Design and testing of Hartley and Colpitt's oscillator for given frequency of oscillation	EEE
531.	Design and testing of Class A and Class B power amplifier and to determine conversion efficiency.	EEE
532.	Design and simulation of Full wave – centre tapped transformer type and Bridge type rectifier circuits with and without Capacitor filter using MATLAB. Determination of ripple factor, regulation and efficiency.	EEE
533.	Load test on DC shunt motor to draw speed–torque, horse power–efficiency characteristics.	EEE
534.	Field Test on DC series machines.	EEE
535.	Speed control of DC shunt motor by armature and field control	EEE
536.	Swin burne's Test on DC motor.	EEE
537.	Retardation test on DC shunt motor.	EEE
538.	Regenerative test on DC shunt machines.	EEE
539.	Load test on three phase induction motor	EEE
540.	No-load and Blocked rotor test on three phase induction motor to draw(i)equivalent circuit and(ii)circle diagram. Determination of performance parameters at different load conditions	EEE
541.	Load test on induction generator.	EEE
542.	Load test on single phase induction motor to draw output versus torque, current, power and efficiency characteristics.	EEE
543.	Conduct suitable tests to draw thee equivalent circuit of single phase induction motor and determine performance parameters.	EEE
544.	Conduct an experiment to draw v and Inverted curves of synchronous motor at no load and load conditions.	EEE
545.	Design and verify a precision full wave rectifier. Determine the performance parameters.	EEE
546.	Design and realize to analyse the frequency response of an op – amp amplifier under inverting and non - inverting configuration for a given gain.	EEE
547.	Design and verify the output waveform of an op – amp RC phase shift oscillator for a desired frequency	EEE
548.	Design and realize Schmitt trigger circuit using an op – amp for desired upper trip point (UTP) and lower trip point (LTP).	EEE
549.	Verify the operation of an op – amp as (a) voltage comparator circuit and (b) zero crossing detector.	EEE
550.	Design and verify the operation of op – amp as an (a) adder (b) subtractor (c) integrator and (d) differentiator.	EEE
551.	Design and realize an op – amp based first order Butterworth (a) low pass (b) high pass and (c) band pass filters for a given cut off frequency/frequencies to verify the frequency response characteristic.	EEE
552.	Design and realize an op – amp based function generator to generate sine, square and triangular waves of desired frequency.	EEE

553.	Design and realization of R-2R ladder DAC.	EEE
554.	Realization of Two bit Flash ADC.	EEE
555.	Design and verify an IC 555 timer based pulse generator for the specified pulse.	EEE
556.	Designing of Fixed voltage power supply (voltage regulator) using IC regulators 78 series and 79 series.	EEE
557.	Data transfer – Program for block data movement, sorting, exchanging, finding largest element in an array	EEE
558.	Arithmetic instructions: Addition, subtraction, multiplication and division. Square and cube operations for 16 bit numbers.	EEE
559.	Counters	EEE
560.	Boolean and logical instructions (bit manipulation).	EEE
561.	Conditional call and return instructions.	EEE
562.	Code conversion programs – BCD to ASCII, ASCII to BCD, ASCII to decimal, Decimal to ASCII, Hexa	EEE
563.	Programs to generate delay, using serial port and on-chip timer/counters.	EEE
564.	Stepper motor interface.	EEE
565.	DC motor interface for direction and speed control using PWM.	EEE
566.	Alphanumerical LCD panel interface.	EEE
567.	Generate different waveforms: Sine, Square, Triangular, Ramp using DAC interface.	EEE
568.	External ADC and Temperature control interface.	EEE
569.	Elevator interface.	EEE
570.	Static Characteristics of SCR	EEE
571.	Static Characteristics of MOSFET and IGBT.	EEE
572.	Characteristic of TRIAC.	EEE
573.	SCR turn on circuit using synchronized UJT relaxation oscillator	EEE
574.	SCR digital triggering circuit for a single phase controlled rectifier and ac voltage regulator.	EEE
575.	Single phase controlled full wave rectifier with R load, R –L load, R-L-E load with and without free wheeling diode.	EEE
576.	AC voltage controller using TRIAC and DIAC combination connected to R and RL loads.	EEE
577.	Speed control of DC motor using single semi converter.	EEE
578.	Speed control of stepper motor	EEE
579.	Speed control of universal motor using ac voltage regulator.	EEE
580.	Speed control of a separately excited D.C. Motor using an IGBT or MOSFET chopper.	EEE
581.	Single phase MOSFET/IGBT based PWM inverter.	EEE
582.	Experiment to draw the speed torque characteristics of (i) AC servo motor (ii) DC servo motor	EEE
583.	Experiment to draw synchro pair characteristics	EEE
584.	Experiment to determine frequency response of a second order system	EEE
585.	(a) To design a passive RC lead compensating network for the given specifications, viz, the maximum phase lead and the frequency at which it occurs and to obtain the frequency response.	EEE

586.	a)To design a passive RC lag compensating network for the given specifications, viz, the maximum phase lag and the frequency at which it occurs and to obtain the frequency response. b) To determine experimentally the transfer function of the lag compensating network.	EEE
587.	Eperiment to draw the frequency response characteristics of the lag-lead compensator network and determination of its transfer function.	EEE
588.	To study a second order system and verify the effect of (a) P, (b) PI, (c) PD and (d) PID controller on the step response.	EEE
589.	a) To simulate a typical second order system and determine step response and evaluate time response specifications b) To evaluate the effect of adding poles and zeros on time response of second order system. c) To evaluate the effect of pole location on stability.	EEE
590.	a) To simulate a D.C. Position control system and obtain its step response. b) To verify the effect of input waveform, loop gain and system type on steady state errors. c) To perform trade-off study for lead compensator. d) To design PI controller and study its effect on steady state error.	EEE
591.	a) To examine the relationship between open-loop frequency response and stability, open-loop frequency and closed loop transient response. b) To study the effect of open loop gain on transient response of closed loop system using root locus.	EEE
592.	a) To study the effect of open loop poles and zeros on root locus contour. b) Comparative study of Bode, Nyquist and root locus with respect to stability.	EEE
593.	Verification of Sampling Theorem both in time and frequency domains	EEE
594.	Evaluation of impulse response of a system	EEE
595.	To perform linear convolution of given sequences	EEE
596.	To perform circular convolution of given sequences using (a) the convolution summation formula.	EEE
597.	Computation of N-point DFT and to plot the magnitude and phase spectrum.	EEE
598.	Linear and circular convolution by DFT and IDFT method	EEE
599.	Solution of a given difference equation.	EEE
600.	Calculation of DFT and IDFT by FFT	EEE
601.	Design and implementation of IIR filters to meet given specification (Low pass, high pass, band pass and band reject filters)	EEE
602.	Design and implementation of FIR filters to meet given specification (Low pass, high pass, band pass and band reject filters) using different window functions.	EEE
603.	Design and implementation of FIR filters to meet given specification (Low pass, high pass, band pass and band reject filters) using frequency sampling technique.	EEE
604.	Realization of IIR and FIR filters.	EEE
605.	Formation for symmetric π /T configuration for Verification of Determination of Efficiency and Regulation.	EEE
606.	Determination of Power Angle Diagrams, Reluctance Power, Excitation, EMF and Regulation for Salient and Non-Salient Pole Synchronous Machines.	EEE

607.	To obtain Swing Curve and to Determine Critical Clearing Time, Regulation, Inertia Constant/Line Parameters /Fault Location/Clearing Time/Pre-Fault Electrical Output for a Single Machine connected to Infinite Bus through a Pair of identical Transmission Lines Under 3-Phase Fault On One of the two Lines.	EEE
608.	Y Bus Formation for Power Systems with and without Mutual Coupling, by Singular	EEE
609.	Formation of Z Bus (without mutual coupling) using Z-Bus Building Algorithm.	EEE
610.	Determination of Bus Currents, Bus Power and Line Flow for a Specified System Voltage.	EEE
611.	Formation of Jacobian for a System not Exceeding 4 Buses in Polar Coordinates	EEE
612.	Load Flow Analysis using Gauss Siedel Method, NR Method and Fast Decoupled Method for Both PQ and PV Buses.	EEE
613.	To Determine Fault Currents and Voltages in a Single Transmission Line System with	EEE
614.	Optimal Generation Scheduling for Thermal power plants by simulation.	EEE
615.	Over Current Relay: (a)Inverse Definite Minimum Time(IDMT) Non Directional Characteristics (b) Directional Features (c) IDMT Directional.	EEE
616.	IDMT Characteristics of Over Voltage or Under Voltage Relay (Solid State or Electromechanical type).	EEE
617.	Operation of Negative Sequence Relay	EEE
618.	Operating Characteristics of Microprocessor Based (Numeric) Over –Current Relay.	EEE
619.	Operating Characteristics of Microprocessor Based (Numeric) Distance Relay.	EEE
620.	Operating Characteristics of Microprocessor Based (Numeric) Over/Under Voltage.	EEE
621.	Generation Protection: Merz Price Scheme.	EEE
622.	Feeder Protection against Faults.	EEE
623.	Motor Protection against Faults.	EEE
624.	Spark Over Characteristics of Air subjected to High Voltage AC with Spark Voltage Corrected to Standard Temperature and Pressure for Uniform [as per IS1876: 2005]and Nonuniform [as per IS2071(Part 1) : 1993] Configurations: Sphere – Sphere, Point – Plane.	EEE
625.	Spark Over Characteristics of Air subjected to High voltage DC.	EEE
626.	Measurement of HVAC and HVDC using Standard Spheres as per IS 1876 :2005	EEE
627.	Measurement of Breakdown Strength of Transformer Oil as per IS 1876 :2005	EEE
628.	Field Mapping using Electrolytic Tank for any one of the following Models: Cable/ Capacitor	EEE
629.	(a) Generation of standard lightning impulse voltage and to determine efficiency and energy of impulse generator. (b) To determine 50% probability flashover voltage for air insulation subjected to impulse voltage.	EEE
630.	Loading effect of different voltmeters on an electric circuit.	EEE
631.	Voltage Dividers with Loads	EEE
632.	Measurement AC and DC quantities (voltage, frequency, current) using oscilloscope.	EEE
633.	Determination of resonant frequency, bandwidth, and Q of a series circuit.	EEE
634.	Determination of resonant frequency, bandwidth, and Q of a parallel circuit.	EEE
635.	Verification of Thevenin's theorem.	EEE

636.	Verification of Norton's theorem.	EEE
637.	Verification of Superposition theorem.	EEE
638.	Power factor correction.	EEE
639.	Measurement of time constant of an RC circuit.	EEE
640.	Study of the effect of Open and Short circuits in simple circuits.	EEE
641.	Verification of maximum Power transfer theorem.	EEE
642.	Construct Astable Multivibrator circuit using IC-555 Timer.	EEE
643.	Construct Mono-stable Multivibrator circuit using IC-555 Timer.	EEE
644.	Construct and test Sequential timer using IC-555.	EEE
645.	Generate Pulse Width Modulator (PWM) signal using IC-555 Timer.	EEE
646.	Construct Burglar Alarm circuit using IC-555 Timer.	EEE
647.	Construct and generate Frequency Shift Keying (FSK) signal using IC-555 Timer.	EEE
648.	Construct and test Running LED circuit using IC-555 Timer.	EEE
649.	Construct water level indicator using IC-555 Timer.	EEE
650.	Construct continuity tester using IC-555 Timer.	EEE
651.	Design and Analysis of (i) Voltage Follower (ii) Inverting & Non – Inverting Amplifier.	EEE
652.	Design and Analysis of full wave rectifier and determine its performance parameters.	EEE
653.	Design and Analysis of frequency response of an Operational Amplifier under inverting and non -inverting configuration for a given gain.	EEE
654.	Design and Analysis of Operational Amplifier based RC Phase Shift Oscillator.	EEE
655.	Design and Analysis of an Operational Amplifier based Wein Bridge Oscillator.	EEE
656.	Design and Analysis of Operational Amplifier based Schmitt Trigger.	EEE
657.	Design and Analysis of Operational Amplifier based (i) Voltage Comparator circuit and (ii) Zero Crossing Detector.	EEE
658.	Design and Analysis of Op-Amp based (i) Adder (ii) Subtractor (iii) Integrator and (iv) Differentiator.	EEE
659.	Design and Analysis of Frequency Response Characteristics Op-Amp based First Order Butterworth (i) Low Pass, (ii) High Pass Filters.	EEE
660.	Design and Analysis of Frequency Response Characteristics Op-Amp based First Order Butterworth (i)Band Pass, (ii) Band Rejection Filters.	EEE
661.	Design and Analysis of Op-Amp based Function Generator to generate Sine, Square and Triangular Signals of desired frequency.	EEE
662.	Design and Analysis of Op-Amp based R – 2R ladder Digital to Analog Converter.	EEE
663.	Design and Analysis of Op-Amp based two bit flash Analog to Digital Converter.	EEE
664.	Design and Analysis of Three Op-Amp Instrumentation Amplifier.	EEE
665.	Familiarization with computer hardware and programming environment, concept of naming the program files, storing, compilation, execution and debugging, taking any simple C – Code.	CSE
666.	Develop a program to compute the roots of a quadratic equation by accepting the coefficients. (No built-in math function)	CSE
667.	Develop a program to compute the roots of a quadratic equation by accepting the coefficients. Print appropriate messages.	CSE

668.	Develop a program to find the reverse of a posit integer and check for PALINDROME or NOT. Display appropriate messages. Ex: Num: 2014, Reverse: 4102, Not a Palindrome.	CSE
669.	An electricity board charges the following rates for the use of electricity: for the first 200 units 80 paise per unit: for the next 100 units 90 paise per unit: beyond 300 units Rs 1 per unit. All users are charged a minimum of Rs. 100 as meter charge. If the total amount is more than Rs. 400, then an additional surcharge of 15% of total amount is charged. Write a program to read the same of the user, number of units consumed and print out the charges.	CSE
670.	Introduce 1 D Array manipulation and implement Binary search.	CSE
671.	Implement using functions to check whether the given number is prime and display appropriate messages. (No built-in math function).	CSE
672.	Develop a program to introduce 2D Array manipulation and implement Matrix multiplication and ensure the rules of manipulation are checked.	CSE
673.	Develop a program to compute Sin(x) using Taylor series approximation. Compare your result with the built-in Library function. Print both the results with appropriate messages.	CSE
674.	Write functions to implement string operations such as compare, concatenate, string length. Convince the parameter passing techniques.	CSE
675.	Develop a program to sort the given set of N numbers using Bubble sort.	CSE
676.	Develop a program to find the square root of a given number N and execute for all possible inputs with appropriate messages. Note: Don't use library function sqrt (n).	CSE
677.	Implement structures to read, write and compute average marks for a class of N students.	CSE
678.	Develop a program using pointers to compute the sum, mean and standard deviation of all elements stored in an array of n real numbers.	CSE
679.	Implement Recursive functions for Binary to Decimal Conversion.	CSE
680.	Design an astablemultivibratorciruit for three cases of duty cycle (50%, <50% and >50%) using NE 555 timer IC. Simulate the same for any one duty cycle.	CSE
681.	Using ua 741 Opamp, design a 1 kHz Relaxation Oscillator with 50% duty cycle. And simulate the same	CSE
682.	Using ua 741 opamap, design a window comparate for any given UTP and LTP. And simulate the same.	CSE
683.	Design and implement Half adder, Full Adder, Half Subtractor, Full Subtractor using basic gates. And implement the same in HDL.	CSE
684.	Given a 4-variable logic expression, simplify it using appropriate technique and realize the simplified logic expression using 8:1 multiplexer IC. And implement the same in HDL.	CSE
685.	Realize a J-K Master / Slave Flip-Flop using NAND gates and verify its truth table. And	CSE

	implement the same in HDL.	
686.	Design and implement code converter I)Binary to Gray (II) Gray to Binary Code using basic gates.	CSE
687.	Design and implement a mod-n (n<8) synchronous up counter using J-K Flip-Flop ICs and demonstrate its working.	CSE
688.	Design and implement an asynchronous counter using decade counter IC to count up from 0 to n (n<=9) and demonstrate on 7-segment display (using IC-7447)	CSE
689.	Design, Develop and Implement a menu driven Program in C for the following array operations. a. Creating an array of N Integer Elements b. Display of array Elements with Suitable Headings c. Inserting an Element (ELEM) at a given valid Position (POS) d. Deleting an Element at a given valid Position (POS) e. Exit. Support the program with functions for each of the above operations.	CSE
690.	Design, Develop and Implement a Program in C for the following operations on Strings. a. Read a main String (STR), a Pattern String (PAT) and a Replace String (REP) b. Perform Pattern Matching Operation: Find and Replace all occurrences of PAT in STR with REP if PAT exists in STR. Report suitable messages in case PAT does not exist in STR Support the program with functions for each of the above operations. Don't use Built-in functions.	CSE
691.	Design, Develop and Implement a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack c. Demonstrate how Stack can be used to check Palindrome d. Demonstrate Overflow and Underflow situations on Stack e. Display the status of Stack f. Exit Support the program with appropriate functions for each of the above operations	CSE
692.	Design, Develop and Implement a Program in C for converting an Infix Expression to Postfix Expression. Program should support for both parenthesized and free parenthesized expressions with the operators: +, -, *, /, % (Remainder), ^ (Power) and alphanumeric operands.	CSE
693.	Design, Develop and Implement a Program in C for the following Stack Applications	CSE

	a. Evaluation of Suffix expression with single digit operands and operators: +, -, *, /, %, ^ b. Solving Tower of Hanoi problem with n disks	
694.	Design, Develop and Implement a menu driven Program in C for the following operations on Circular QUEUE of Characters (Array Implementation of Queue with maximum size MAX) a. Insert an Element on to Circular QUEUE b. Delete an Element from Circular QUEUE c. Demonstrate Overflow and Underflow situations on Circular QUEUE d. Display the status of Circular QUEUE e. Exit Support the program with appropriate functions for each of the above operations	CSE
695.	Design, Develop and Implement a menu driven Program in C for the following operations on Singly Linked List (SLL) of Student Data with the fields: USN, Name, Programme, Sem, PhNo a. Create a SLL of N Students Data by using front insertion. b. Display the status of SLL and count the number of nodes in it c. Perform Insertion / Deletion at End of SLL d. Perform Insertion / Deletion at Front of SLL(Demonstration of stack) e. Exit Design, Develop and Implement a menu driven Program in C for the following operations on Doubly Linked List (DLL) of Employee Data with the fields: SSN, Name, Dept, Designation, Sal, PhNo a. Create a DLL of N Employees Data by using end insertion. b. Display the status of DLL and count the number of nodes in it c. Perform Insertion and Deletion at End of DLL d. Perform Insertion and Deletion at Front of DLL e. Demonstrate how this DLL can be used as Double Ended Queue. f. Exit	CSE
696.	Design, Develop and Implement a Program in C for the following operationson Singly Circular Linked List (SCLL) with header nodes a. Represent and Evaluate a Polynomial P(x,y,z) = 6x2y2z-4yz5+3x3yz+2xy5z-2xyz3 b. Find the sum of two polynomials POLY1(x,y,z) and POLY2(x,y,z) and store the result in POLYSUM(x,y,z) Support the program with appropriate functions for each of the above operations	CSE
697.	Design, Develop and Implement a menu driven Program in C for the following operations on Binary Search Tree (BST) of Integers . a. Create a BST of N Integers: 6, 9, 5, 2, 8, 15, 24, 14, 7, 8, 5, 2 b. Traverse the BST in Inorder, Preorder and Post Order c. Search the BST for a given element (KEY) and report the appropriate message d. Exit	CSE
698.	Design, Develop and Implement a Program in C for the following operations on Graph(G) of Cities a. Create a Graph of N cities using Adjacency Matrix. b. Print all the nodes reachable from a given starting node in a digraph using DFS/BFS	CSE

	method	
699.	Given a File of N employee records with a set K of Keys (4-digit) which uniquely determine the records in file F. Assume that file F is maintained in memory by a Hash Table (HT) of m memory locations with L as the set of memory addresses (2-digit) of locations in HT. Let the keys in K and addresses in L are Integers. Design and develop a Program in C that uses Hash function H: K □L as H(K)=K mod m (remainder method), and implement hashing technique to map a given key K to the address space L. Resolve the collision (if any) using linear probing.	CSE
700.	A) Create a Java class called Student with the following details as variables within it. (i) USN (ii) Name (iii) Programme (iv) Phone Write a Java program to create n Student objects and print the USN, Name, Programme, and Phone of these objects with suitable headings. B) Write a Java program to implement the Stack using arrays. Write Push(), Pop(), and Display() methods to demonstrate its working.	CSE
701.	A) Design a superclass called Staff with details as StaffId, Name, Phone, Salary. Extend this class by writing three subclasses namely Teaching (domain, publications), Technical (skills), and Contract (period). Write a Java program to read and display at least 3 staff objects of all three categories B) Write a Java class called Customer to store their name and date_of_birth. The date_of_birth format should be dd/mm/yyyy. Write methods to read customer data as <name, dd/mm/yyyy> and display as <name, dd, mm, yyyy> using StringTokenizer class considering the delimiter character as "/".	CSE
702.	A) Write a Java program to read two integers aandb. Compute a/b and print, when b is not zero. Raise an exception when b is equal to zero. B) Write a Java program that implements a multi-thread application that has three threads. First thread generates a random integer for every 1 second; second thread computes the square of the number andprints; third thread will print the value of cube of the number.	CSE
703.	Sort a given set of n integer elements using Quick Sort method and compute its time complexity. Run the program for varied values of n> 5000 and record the time taken to sort. Plot a graph of the time taken versus non graph sheet. The elements can be read from a file or can be generated using the random number generator. Demonstrate using Java how the divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case.	CSE
704.	Sort a given set of n integer elements using Merge Sort method and compute its time complexity. Run the program for varied values of n> 5000, and record the time taken to sort. Plot a graph of the time taken versus non graph sheet. The elements can be read from a file or can be generated using the random number generator. Demonstrate using Java how the divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case.	CSE
705.	Implement in Java, the 0/1 Knapsack problem using (a) Dynamic Programming method	CSE

	(b) Greedy method	
706.	From a given vertex in a weighted connected graph, find shortest paths to other vertices using Dijkstra's algorithm. Write the program in Java.	CSE
707.	Find Minimum Cost Spanning Tree of a given connected undirected graph using Kruskal's algorithm. Use Union-Find algorithms in your program	CSE
708.	Find Minimum Cost Spanning Tree of a given connected undirected graph using Prim's algorithm.	CSE
709.	Write Java programs to (a) Implement All-Pairs Shortest Paths problem using Floyd's algorithm. (b) Implement Travelling Sales Person problem using Dynamic programming.	CSE
710.	Design and implement in Java to find a subset of a given set S = {Sl, S2,.....,Sn} of n positive integers whose SUM is equal to a given positive integer d. For example, if S ={1, 2, 5, 6, 8} and d= 9, there are two solutions {1,2,6}and {1,8}. Display a suitable message, if the given problem instance doesn't have a solution.	CSE
711.	Design and implement in Java to find all Hamiltonian Cycles in a connected undirected Graph G of n vertices using backtracking principle.	CSE
712.	Write a program to multiply two 16 bit binary numbers.	CSE
713.	Write a program to find the sum of first 10 integer numbers.	CSE
714.	Write a program to find factorial of a number.	CSE
715.	Write a program to add an array of 16 bit numbers and store the 32 bit result in internal RAM	CSE
716.	Write a program to find the square of a number (1 to 10) using look-up table.	CSE
717.	Write a program to find the largest/smallest number in an array of 32 numbers .	CSE
718.	Write a program to arrange a series of 32 bit numbers in ascending/descending order.	CSE
719.	Write a program to count the number of ones and zeros in two consecutive memory locations.	CSE
720.	Display "Hello World" message using Internal UART	CSE
721.	Interface and Control a DC Motor.	CSE
722.	Interface a Stepper motor and rotate it in clockwise and anti-clockwise direction.	CSE
723.	Determine Digital output for a given Analog input using Internal ADC of ARM controller.	CSE
724.	Interface a DAC and generate Triangular and Square waveforms	CSE
725.	Interface a 4x4 keyboard and display the key code on an LCD.	CSE
726.	Demonstrate the use of an external interrupt to toggle an LED On/Off.	CSE
727.	Display the Hex digits 0 to F on a 7-segment LED interface, with an appropriate delay in between	CSE
728.	Implement three nodes point – to – point network with duplex links between them. Set the queue size, vary the bandwidth and find the number of packets dropped.	CSE
729.	Implement transmission of ping messages/trace route over a network topology consisting of 6 nodes and find the number of packets dropped due to congestion.	CSE
730.	Implement an Ethernet LAN using n nodes and set multiple traffic nodes and plot congestion window for different source / destination.	CSE
731.	Implement simple ESS and with transmitting nodes in wire-less LAN by simulation and	CSE

	determine the performance with respect to transmission of packets.	
732.	Implement and study the performance of GSM on NS2/NS3 (Using MAC layer) or equivalent environment	CSE
733.	Implement and study the performance of CDMA on NS2/NS3 (Using stack called Call net) or equivalent environment	CSE
734.	Write a program for error detecting code using CRC-CCITT (16- bits).	CSE
735.	Write a program to find the shortest path between vertices using bellman-ford algorithm.	CSE
736.	Using TCP/IP sockets, write a client – server program to make the client send the file name and to make the server send back the contents of the requested file if present.	CSE
737.	Write a program on datagram socket for client/server to display the messages on client side, typed at the server side.	CSE
738.	Write a program for simple RSA algorithm to encrypt and decrypt the data.	CSE
739.	Write a program for congestion control using leaky bucket algorithm.	CSE
740.	Consider the following schema for a Library Database: BOOK(Book_id, Title, Publisher_Name, Pub_Year) BOOK_AUTHORS(Book_id, Author_Name) PUBLISHER(Name, Address, Phone) BOOK_COPIES(Book_id, Programme_id, No-of_Copies) BOOK_LENDING(Book_id, Programme_id, Card_No, Date_Out, Due_Date) LIBRARY_PROGRAMME(Programme_id, Programme_Name, Address) Write SQL queries to 1. Retrieve details of all books in the library – id, title, name of publisher, authors, number of copies in each Programme, etc. 2. Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017. 3. Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation. 4. Partition the BOOK table based on year of publication. Demonstrate its working with a simple query. 5. Create a view of all books and its number of copies that are currently available in the Library.	CSE
741.	Consider the following schema for Order Database: SALESMAN(Salesman_id, Name, City, Commission) CUSTOMER(Customer_id, Cust_Name, City, Grade, Salesman_id) ORDERS(Ord_No, Purchase_Amt, Ord_Date, Customer_id, Salesman_id) Write SQL queries to 1. Count the customers with grades above Bangalore‟s average. 2. Find the name and numbers of all salesman who had more than one customer. 3. List all the salesman and indicate those who have and don‟t have customers in their cities (Use UNION operation.) 4. Create a view that finds the salesman who has the customer with the highest order of a day. 5. Demonstrate the DELETE operation by removing salesman with id 1000. All his orders must also be deleted.	CSE

742.	Consider the schema for Movie Database: ACTOR(Act_id, Act_Name, Act_Gender) DIRECTOR(Dir_id, Dir_Name, Dir_Phone) MOVIES(Mov_id, Mov_Title, Mov_Year, Mov_Lang, Dir_id) MOVIE_CAST(Act_id, Mov_id, Role) RATING(Mov_id, Rev_Stars) Write SQL queries to 1. List the titles of all movies directed by „Hitchcock". 2. Find the movie names where one or more actors acted in two or more movies. 3. List all actors who acted in a movie before 2000 and also in a movie after 2015 (use JOIN operation). 4. Find the title of movies and number of stars for each movie that has at least one rating and find the highest number of stars that movie received. Sort the result by movie title. 5. Update rating of all movies directed by „Steven Spielberg" to 5.	CSE
743.	Consider the schema for College Database: STUDENT(USN, SName, Address, Phone, Gender) SEMSEC(SSID, Sem, Sec) CLASS(USN, SSID) COURSE(Subcode, Title, Sem, Credits) IAMARKS(USN, Subcode, SSID, Test1, Test2, Test3, FinalIA) Write SQL queries to 1. List all the student details studying in fourth semester „C" section. 2. Compute the total number of male and female students in each semester and in each section. 3. Create a view of Test1 marks of student USN „1BI15CS101" in all Courses. 4. Calculate the FinalIA (average of best two test marks) and update the corresponding table for all students. 5. Categorize students based on the following criterion: If FinalIA = 17 to 20 then CAT = „Outstanding" If FinalIA = 12 to 16 then CAT = „Average" If FinalIA< 12 then CAT = „Weak" Give these details only for 8th semester A, B, and C section students.	CSE
744.	Consider the schema for Company Database: EMPLOYEE(SSN, Name, Address, Sex, Salary, SuperSSN, DNo) DEPARTMENT(DNo, DName, MgrSSN, MgrStartDate) DLOCATION(DNo,DLoc) PROJECT(PNo, PName, PLocation, DNo) WORKS_ON(SSN, PNo, Hours) Write SQL queries to 1. Make a list of all project numbers for projects that involve an employee whose last name is „Scott", either as a worker or as a manager of the department that controls the project. 2. Show the resulting salaries if every employee working on the „IoT" project is given a	CSE

	10 percent raise. 3. Find the sum of the salaries of all employees of the „Accounts" department, as well as the maximum salary, the minimum salary, and the average salary in this department 4. Retrieve the name of each employee who works on all the projects controlled by department number 5 (use NOT EXISTS operator). 5. For each department that has more than five employees, retrieve the department number and the number of its employees who are making more than Rs. 6,00,000	
745.	A) Write a LEX program to recognize valid arithmetic expression. Identifiers in the expression could be only integers and operators could be + and *. Count the identifiers & operators present and print them separately. B) Write YACC program to evaluate arithmetic expression involving operators: +, -, *, and /	CSE
746.	Develop, Implement and Execute a program using YACC tool to recognize all strings ending with b preceded by n a's using the grammar an b (note: input n value)	CSE
747.	Design, develop and implement YACC/C program to construct Predictive / LL(1) Parsing Table for the grammar rules: A □aBa , B □bB | □. Use this table to parse the sentence: abba$	CSE
748.	Design, develop and implement YACC/C program to demonstrate Shift Reduce Parsing technique for the grammar rules: E □E+T | T, T □T*F | F, F □(E) | id and parse the sentence: id + id * id.	CSE
749.	Design, develop and implement a C/Java program to generate the machine code using Triples for the statement A = -B * (C +D) whose intermediate code in three-address form: T1 = -B T2 = C + D T3 = T1 + T2 A = T3	CSE
750.	A) Write a LEX program to eliminate comment lines in a C program and copy the resulting program into a separate file. B) Write YACC program to recognize valid identifier, operators and keywords in the given text (C program) file	CSE
751.	Design, develop and implement a C/C++/Java program to simulate the working of Shortest remaining time and Round Robin (RR) scheduling algorithms. Experiment with different quantum sizes for RR algorithm.	CSE
752.	Design, develop and implement a C/C++/Java program to implement Banker"s algorithm. Assume suitable input required to demonstrate the results	CSE
753.	Design, develop and implement a C/C++/Java program to implement page replacement algorithms LRU and FIFO. Assume suitable input required to demonstrate the results	CSE
754.	Implement Brenham"s line drawing algorithm for all types of slope.	CSE
755.	Create and rotate a triangle about the origin and a fixed point.	CSE
756.	Draw a colour cube and spin it using OpenGL transformation matrices.	CSE

757.	Draw a color cube and allow the user to move the camera suitably to experiment with perspective viewing	CSE
758.	Clip a lines using Cohen-Sutherland algorithm	CSE
759.	To draw a simple shaded scene consisting of a tea pot on a table. Define suitably the position and properties of the light source along with the properties of the surfaces of the solid object used in the scene.	CSE
760.	Design, develop and implement recursively subdivide a tetrahedron to form 3D sierpinski gasket. The number of recursive steps is to be specified by the user.	CSE
761.	Develop a menu driven program to animate a flag using Bezier Curve algorithm	CSE
762.	Develop a menu driven program to fill the polygon using scan line algorithm	CSE
763.	Create an application to design a Visiting Card. The Visiting card should have a company logo at the top right corner. The company name should be displayed in Capital letters, aligned to the center. Information like the name of the employee, job title, phone number, address, email, fax and the website address is to be displayed. Insert a horizontal line between the job title and the phone number.	CSE
764.	Develop an Android application using controls like Button, Text View, Edit Text for designing a calculator having basic functionality like Addition, Subtraction, Multiplication, and Division	CSE
765.	Create a SIGN Up activity with Username and Password. Validation of password should happen based on the following rules: • Password should contain uppercase and lowercase letters. • Password should contain letters and numbers. • Password should contain special characters. • Minimum length of the password (the default value is 8). On successful SIGN UP proceed to the next Login activity. Here the user should SIGN IN using the Username and Password created during signup activity. If the Username and Password are matched then navigate to the next activity whichdisplays a message saying "Successful Login" or else display a toast message saying "Login Failed".The user is given only two attempts and after thatdisplay a toast message saying "Failed Login Attempts" and disable the SIGN IN button. Use Bundle to transfer information from one activity to another.	CSE
766.	Develop an application to set an image as wallpaper. On click of a button, the wallpaper image should start to change randomly every 30 seconds.	CSE
767.	Write a program to create an activity with two buttons START and STOP. On pressingoftheSTART button, the activity must start the counter by displaying the numbers from One and the counter must keep on counting until the STOP button is pressed. Display the counter value in a TextViewcontrol.	CSE
768.	Create two files of XML and JSON type with values for City_Name, Latitude, Longitude, Temperature,andHumidity. Develop an application to create an activity with two buttons to parse the XML and JSON files which when clicked should display the data in their respective layouts side by side	CSE
769.	Develop a simple application withoneEditTextso that the user can write some text in it. Create a button called "Convert Text to Speech" that converts the user input text into voice.	CSE

770.	Create an activity like a phone dialer withCALLand SAVE buttons. On pressing the CALL button, it must call the phone number and on pressing the SAVE button it must save the number to the phone contacts.	CSE
771.	Write a program to enter Medicine Name, Date and Time of the Day as input from the user and store it in the SQLite database. Input for Time of the Day should be either Morning or Afternoon or Eveningor Night. Trigger an alarm based on the Date and Time of the Day and display the Medicine Name.	CSE
772.	Develop a content provider application with an activity called "Meeting Schedule" which takes Date, Time and Meeting Agenda as input from the user and store this information into the SQLite database. Create another application with an activity called "Meeting Info" having DatePicker control, which on the selection of a date should display the Meeting Agenda information for that particular date, else it should display a toast message saying "No Meeting on this Date".	CSE
773.	Create an application to receive an incoming SMS which is notified to the user. On clicking this SMS notification, the message content and the number should be displayed on the screen. Use appropriate emulator control to send the SMS message to your application.	CSE
774.	Write a program to create an activity having a Text box, and also Save, Open and Create buttons. The user has to write some text in the Text box. On pressing the Create button the text should be saved as a text file in MkSDcard. On subsequent changes to the text, the Save button should be pressed to store the latest content to the same file. On pressing the Open button, it should display the contents from the previously stored files in the Text box. If the user tries to save the contents in the Textbox to a file without creating it, then a toast message has to be displayed saying "First Create a File". Create an application to demonstrate a basic media playerthat allows the user to Forward, Backward, Play and Pause an audio. Also, make use of the indicator in the seek bar to move the audio forward or backward as required.	CSE
775.	Develop an application to demonstrate the use of Asynchronous tasks in android. The asynchronous task should implement the functionality of a simple moving banner. On pressing the Start Task button, the banner message should scrollfrom right to left. On pressing the Stop Task button, the banner message should stop.Let the banner message be "Demonstration of Asynchronous Task".	CSE
776.	Develop an application that makes use of the clipboard framework for copying and pasting of the text. The activity consists of two EditText controls and two Buttons to trigger the copy and paste functionality.	CSE
777.	Create an AIDL service that calculates Car Loan EMI. The formula to calculate EMI is E = P * (r(1+r)n)/((1+r)n-1) where E = The EMI payable on the car loan amount P = The Car loan Principal Amount r = The interest rate value computed on a monthly basis n = The loan tenure in the form of months The down payment amount has to be deducted from the principal amount paid towards buying the Car. Develop an application that makes use of this AIDL service to calculate the EMI. This application should have four EditText to read the PrincipalAmount, Down	CSE

	Payment, Interest Rate, Loan Term (in months) and a button named as "Calculate Monthly EMI". On click of this button, the result should be shown in a TextView. Also, calculate the EMI by varying the Loan Term and Interest Rate values.	
778.	Implement A* Search algorithm.	CSE
779.	Implement AO* Search algorithm.	CSE
780.	For a given set of training data examples stored in a .CSV file, implement and demonstrate the Candidate-Elimination algorithm to output a description of the set of all hypotheses consistent with the training examples	CSE
781.	Write a program to demonstrate the working of the decision tree based ID3 algorithm. Use an appropriate data set for building the decision tree and apply this knowledge to classify a new sample.	CSE
782.	Build an Artificial Neural Network by implementing the Back propagation algorithm and test the same using appropriate data sets.	CSE
783.	Apply EM algorithm to cluster a set of data stored in a .CSV file. Use the same data set for clustering using k-Means algorithm. Compare the results of these two algorithms and comment on the quality of clustering. You can add Java/Python ML library classes/API in the program.	CSE
784.	Write a program to implement k-Nearest Neigh bour algorithm to classify the iris data set. Print both correct and wrong predictions. Java/Python ML library classes can be used for this problem.	CSE
785.	Implement the non-parametric Locally Weighted Regression algorithm in order to fit data points. Select appropriate data set for your experiment and draw graphs.	CSE
786.	Practice Programs: • Calculation of Simple Interest, • Check whether the given number is even or odd • Convert string case • Check for palindrome, prime number, perfect square. • Development of linear search algorithm Etc…	CSE
787.	Simulation of a SimpleCalculator.	CSE
788.	Implement Matrix multiplication and validate the rules of multiplication.	CSE
789.	Compute sin(x)/cos(x) using Taylor series approximation. Compare your result with the built-in library function. Print both the results with appropriate inferences.	CSE
790.	Write functions to implement string operations such as compare, concatenate, string length. Convince the parameter passing techniques.	CSE
791.	Design, Develop and Implement a menu driven Program in C for the following Array Operations a. Creating an Array of N Integer Elements b. Display of Array Elements with Suitable Headings c. Exit. Support the program with functions for each of the above operations.	CSE
792.	Design, Develop and Implement a menu driven Program in C for the following Array operations a. Inserting an Element (ELEM) at a given valid Position (POS) b. Deleting an Element at a given valid Position POS)	CSE

793.	Design, Develop and Implement a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack c. Demonstrate Overflow and Underflow situations on Stack d. Display the status of Stack e. Exit Support the program with appropriate functions for each of the above operations	CSE
794.	Design, Develop and Implement a Program in C for the following Stack Applications a. Evaluation of Suffix expression with single digit operands and operators: +, -, *, /, %, ^ b. Solving Tower of Hanoi problem with n disks	CSE
795.	Singly Linked List (SLL) of Integer Data a. Create a SLL stack of N integer. b. Display of SLL c. Linear search. Create a SLL queue of N Students Data Concatenation of two SLL of integers.	CSE
796.	Design, Develop and Implement a menu driven Program in C for the following operationson Doubly Linked List (DLL) of Professor Data with the fields: ID, Name, Branch, Area of specialization a. Create a DLL stack of N Professor's Data. b. Create a DLL queue of N Professor's Data Display the status of DLL and count the number of nodes in it.	CSE
797.	Given an array of elements, construct a complete binary tree from this array in level order fashion. That is, elements from left in the array will be filled in the tree level wise starting from level 0. Ex: Input : arr[] = {1, 2, 3, 4, 5, 6} Output : Root of the following tree 1 / \ 2 3 / \ /\ 4 5 6	CSE
798.	Design, Develop and Implement a menu driven Program in C for the following operations on Binary Search Tree (BST) of Integers a. Create a BST of N Integers b. Traverse the BST in Inorder, Preorder and Post Order	CSE
799.	Design, Develop and implement a program in C for the following operations on Graph (G) of cities a. Create a Graph of N cities using Adjacency Matrix. b. Print all the nodes reachable from a given starting node in a diagraph using DFS/BFS method.	CSE

800.	Design and develop a program in C that uses Hash Function H:K->L as H(K)=K mod m(reminder method) and implement hashing technique to map a given key K to the address space L. Resolve the collision (if any) using linear probing.	CSE
801.	Simulate BJT CE voltage divider biased voltage amplifier using any suitable circuit simulator	CSE
802.	Write a java program that prints all real solutions to the quadratic equation ax2+bx+c=0. Read in a, b, c and use the quadratic formula.	CSE
803.	Create a Java class called Student with the following details as variables within it. USN Name Branch Phone Write a Java program to create n Student objects and print the USN, Name, Branch, and Phone of these objects with suitable headings	CSE
804.	A) Write a program to check prime number B) Write a program for Arithmetic calculator using switch case menu	CSE
805.	Design a super class called Staff with details as StaffId, Name, Phone, Salary. Extend this class by writing three subclasses namely Teaching (domain, publications), Technical (skills), and Contract (period). Write a Java program to read and display at least 3 staff objects of all three categories.	CSE
806.	Write a java program demonstrating Method overloading and Constructor overloading.	CSE
807.	Develop a java application to implement currency converter (Dollar to INR, EURO to INR, Yen to INR and vice versa), distance converter (meter to KM, miles to KM and vice versa), time converter (hours to minutes, seconds and vice versa) using packages.	CSE
808.	Write a program to generate the resume. Create 2 Java classes Teacher (data: personal information, qualification, experience, achievements) and Student (data: personal information, result, discipline) which implements the java interface Resume with the method biodata().	CSE
809.	Write a Java program that implements a multi-thread application that has three threads. First thread generates a random integer for every 1 second; second thread computes the square of the number and prints; third thread will print the value of cube of the number.	CSE
810.	Write a program to perform string operations using ArrayList. Write functions for the following a. Append - add at end b. Insert – add at particular index c. Search d. List all string starts with given letter.	CSE
811.	Write a Java program to read two integers a and b. Compute a/b and print, when b is not zero. Raise an exception when b is equal to zero. Write a java program that reads a file name from the user, displays information about whether the file exists, whether the file is readable, or writable, the type of file and the length of the file in bytes	CSE
812.	Develop an applet that displays a simple message in center of the screen. Develop a simple calculator using Swings	CSE
813.	Sort a given set of n integer elements using Selection Sort method and compute its time complexity. Run the program for varied values of n> 5000 and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can	CSE

	be generated using the random number generator. Demonstrate using C++/Java how the brute force method works along with its time complexity analysis: worst case, average case and best case	
814.	Sort a given set of n integer elements using Quick Sort method and compute its time	CSE
815.	Sort a given set of n integer elements using Merge Sort method and compute its time complexity. Run the program for varied values of n> 5000, and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using C++/Java how the divide-and-conquer method works along with its time complexity analysis: worst case, average case and best case.	CSE
816.	To solve Knapsack problem using Greedy method.	CSE
817.	To find shortest paths to other vertices from a given vertex in a weighted connected graph, using Dijkstra's algorithm	CSE
818.	To find Minimum Cost Spanning Tree of a given connected undirected graph using Kruskal's algorithm. Use Union-Find algorithms in your program.	CSE
819.	To find Minimum Cost Spanning Tree of a given connected undirected graph using Prim's algorithm.	CSE
820.	Solve All-Pairs Shortest Paths problem using Floyd's algorithm.	CSE
821.	Solve Travelling Sales Person problem using Dynamic programming.	CSE
822.	Solve 0/1 Knapsack problem using Dynamic Programming method.	CSE
823.	Design and implement C++/Java Program to find a subset of a given set S = {Sl, S2,…,Sn} of n positive integers whose SUM is equal to a given positive integer d. For example, if S = {1, 2, 5, 6, 8} and d= 9, there are two solutions {1, 2, 6} and {1, 8}. Display a suitable message, if the given problem instance doesn't have a solution.	CSE
824.	Design and implement C++/Java Program to find all Hamiltonian Cycles in a connected undirected Graph G of n vertices using backtracking principle.	CSE
825.	Using Keil software, observe the various registers, dump, CPSR, with a simple ALP programme.	CSE
826.	A) Write a python program to find the best of two test average marks out of three test's marks accepted from the user. B) Develop a Python program to check whether a given number is palindrome or not and also count the number of occurrences of each digit in the input number.	CSE
827.	A) Defined as a function F as Fn = Fn-1 + Fn-2. Write a Python program which accepts a value for N (where N >0) as input and pass this value to the function. Display suitable error message if the condition for input value is not followed. B) Develop a python program to convert binary to decimal, octal to hexadecimal using functions .	CSE
828.	a) Write a Python program that accepts a sentence and find the number of words, digits, uppercase letters and lowercase letters.	CSE
829.	Write a Python program to find the string similarity between two given strings	CSE
830.	a) Write a python program to implement insertion sort and merge sort using lists b) Write a program to convert roman numbers in to integer values using dictionaries.	CSE
831.	a) Write a function called is phonenumber () to recognize a pattern 415-555-4242 without	CSE

	using regular expression and also write the code to recognize the same pattern using regular expression. b) Develop a python program that could search the text in a file for phone numbers (+919900889977) and email addresses (sample@gmail.com)	
832.	A) Write a python program to accept a file name from the user and perform the following operations 1. Display the first N line of the file 2. Find the frequency of occurrence of the word accepted from the user in the file B) Write a python program to create a ZIP file of a particular folder which contains several files inside it.	CSE
833.	A) By using the concept of inheritance write a python program to find the area of triangle, circle and rectangle. B) Write a python program by creating a class called Employee to store the details of Name, Employee_ID, Department and Salary, and implement a method to update salary of employees belonging to a given department.	CSE
834.	Write a python program to find the whether the given input is palindrome or not (for both string and integer) using the concept of polymorphism and inheritance.	CSE
835.	A) Write a python program to download the all XKCD comics B) Demonstrate python program to read the data from the spreadsheet and write the data in to the spreadsheet	CSE
836.	A) Write a python program to combine select pages from many PDFs B) Write a python program to fetch current weather data from the JSON file	CSE
837.	Design and develop a web page to create student profile using basic html tags.	CSE
838.	Design and develop a web page to create travel book for demonstrating Hyperlinks.	CSE
839.	Design and develop a web page to display list of courses offered by college using Lists.	CSE
840.	Design and develop a web page to create class time-table using tables.	CSE
841.	Design and develop a web page to display table of content chapterwise using frames.	CSE
842.	Design and develop a web page to create college website using cascading stylesheets.	CSE
843.	Design and develop a javascript program to design simple calculator to perform the following operations sum, difference, product and quotient .	CSE
844.	Design and develop a javascript program that calculates the squares and cubes of the number from 0 to 10 and outputs html texts that displays the resulting values in an html table format.	CSE
845.	a. Design and develop a javascript program to display weekday name using switch case.	CSE
846.	b. Design and develop a javascript program to display the numbers 1 to 4 using regular expression.	CSE
847.	Develop Angular JS program that allows user to input their first name and last name and display their full name..	CSE
848.	Develop an Angular JS application that displays a list of shopping items. Allow users to add and remove items from the list using directives and controllers.	CSE
849.	Develop a simple Angular JS calculator application that can perform basic mathematical operations (addition, subtraction, multiplication, division) based on user input.	CSE
850.	Write an Angular JS application that can calculate factorial and compute square based on given user input.	CSE

851.	Develop AngularJS application that displays a details of students and their CGPA. Allow users to read the number of students and display the count.	CSE
852.	Develop an AngularJS program to create a simple to-do list application. Allow users to add, edit, and delete tasks.	CSE
853.	Write an AngularJS program to create a simple CRUD application (Create, Read, Update, and Delete) for managing users.	CSE
854.	DevelopAngularJS program to create a login form, with validation for the username and password fields.	CSE
855.	Create an AngularJS application that displays a list of employees and their salaries. Allow users to search for employees by name and salary.	CSE
856.	Create AngularJS application that allows users to maintain a collection of items. The application should display the current total number of items, and this count should automatically update as items are added or removed. Users should be able to add items to the collection and remove them as needed.	CSE
857.	Create AngularJS application to convert student details to Uppercase using angular filters.	CSE
858.	Create an AngularJS application that displays the date by using date filter parameters	CSE
859.	Write a C Program to display the following by reading the number of rows as input, 1 1 2 1 1 2 2 3 1 ---------- nth row	CSE
860.	Given a 4-variable logic expression, simplify it using appropriate technique and simulate the same using basic gates	CSE
861.	Design a 4 bit full adder and subtractor and simulate the same using basic gates.	CSE
862.	Design Verilog HDL to implement simple circuits using structural, Data flow and Behavioural model.	CSE
863.	Design Verilog HDL to implement Binary Adder-Subtractor – Half and Full Adder, Half and Full Subtractor.	CSE
864.	Design Verilog HDL to implement Decimal adder.	CSE
865.	Design Verilog program to implement Different types of multiplexer like 2:1, 4:1 and 8:1.	CSE
866.	Design Verilog program to implement types of De-Multiplexer.	CSE
867.	Design Verilog program for implementing various types of Flip-Flops such as SR, JK and D.	CSE
868.	Develop a c program to implement the Process system calls (fork (), exec(), wait(), create process, terminate process)	CSE
869.	Simulate the following CPU scheduling algorithms to find turnaround time and waiting time a) FCFS b) SJF c) Round Robin d) Priority.	CSE
870.	Develop a C program to simulate producer-consumer problem using semaphores.	CSE

871.	Develop a C program which demonstrates interprocess communication between a reader process and a writer process. Use mkfifo, open, read, write and close APIs in your program.	CSE
872.	Develop a C program to simulate Bankers Algorithm for DeadLock Avoidance.	CSE
873.	Develop a C program to simulate the following contiguous memory allocation Techniques: a) Worst fit b) Best fit c) First fit.	CSE
874.	Develop a C program to simulate page replacement algorithms: a) FIFO b) LRU	CSE
875.	Simulate following File Organization Techniques a) Single level directory b) Two level directory	CSE
876.	Develop a C program to simulate the Linked file allocation strategies.	CSE
877.	Develop a C program to simulate SCAN disk scheduling algorithm.	CSE
878.	Develop a Program in C for the following: a) Declare a calendar as an array of 7 elements (A dynamically Created array) to represent 7 days of a week. Each Element of the array is a structure having three fields. The first field is the name of the Day (A dynamically allocated String), The second field is the date of the Day (A integer), the third field is the description of the activity for a particular day (A dynamically allocated String). b) Write functions create(), read() and display(); to create the calendar, to read the data from the keyboard and to print weeks activity details report on screen.	CSE
879.	Develop a Program in C for the following operations on Strings. a. Read a main String (STR), a Pattern String (PAT) and a Replace String (REP) b. Perform Pattern Matching Operation: Find and Replace all occurrences of PAT in STR with REP if PAT exists in STR. Report suitable messages in case PAT does not exist in STR Support the program with functions for each of the above operations. Don't use Built-in functions.	CSE
880.	Develop a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack c. Demonstrate how Stack can be used to check Palindrome d. Demonstrate Overflow and Underflow situations on Stack e. Display the status of Stack f. Exit Support the program with appropriate functions for each of the above operations	CSE
881.	Develop a Program in C for converting an Infix Expression to Postfix Expression. Program should support for both parenthesized and free parenthesized expressions with the operators: +, -, *, /, % (Remainder), ^ (Power) and alphanumeric operands.	CSE
882.	Develop a Program in C for the following Stack Applications	CSE

	a. Evaluation of Suffix expression with single digit operands and operators: +, -, *, /, %, ^ b. Solving Tower of Hanoi problem with n disks	
883.	Develop a menu driven Program in C for the following operations on Circular QUEUE of Characters (Array Implementation of Queue with maximum size MAX) a. Insert an Element on to Circular QUEUE b. Delete an Element from Circular QUEUE c. Demonstrate Overflow and Underflow situations on Circular QUEUE d. Display the status of Circular QUEUE e. Exit Support the program with appropriate functions for each of the above operations	CSE
884.	Develop a menu driven Program in C for the following operations on Singly Linked List (SLL) of Student Data with the fields: USN, Name, Programme, Sem, PhNo a. Create a SLL of N Students Data by using front insertion. b. Display the status of SLL and count the number of nodes in it c. Perform Insertion / Deletion at End of SLL d. Perform Insertion / Deletion at Front of SLL(Demonstration of stack) e. Exit	CSE
885.	Develop a menu driven Program in C for the following operations on Doubly Linked List (DLL) of Employee Data with the fields: SSN, Name, Dept, Designation, Sal, PhNo a. Create a DLL of N Employees Data by using end insertion. b. Display the status of DLL and count the number of nodes in it c. Perform Insertion and Deletion at End of DLL d. Perform Insertion and Deletion at Front of DLL e. Demonstrate how this DLL can be used as Double Ended Queue. f. Exit	CSE
886.	Develop a Program in C for the following operationson Singly Circular Linked List (SCLL) with header nodes a. Represent and Evaluate a Polynomial P(x,y,z) = 6x2y2z-4yz5+3x3yz+2xy5z-2xyz3 b. Find the sum of two polynomials POLY1(x,y,z) and POLY2(x,y,z) and store the result in POLYSUM(x,y,z) Support the program with appropriate functions for each of the above operations	CSE
887.	Develop a menu driven Program in C for the following operations on Binary Search Tree (BST) of Integers . a. Create a BST of N Integers: 6, 9, 5, 2, 8, 15, 24, 14, 7, 8, 5, 2 b. Traverse the BST in Inorder, Preorder and Post Order c. Search the BST for a given element (KEY) and report the appropriate message d. Exit	CSE
888.	Develop a Program in C for the following operations on Graph(G) of Cities a. Create a Graph of N cities using Adjacency Matrix. b. Print all the nodes reachable from a given starting node in a digraph using DFS/BFS	CSE

	method	
889.	Given a File of N employee records with a set K of Keys (4-digit) which uniquely determine the records in file F. Assume that file F is maintained in memory by a Hash Table (HT) of m memory locations with L as the set of memory addresses (2-digit) of locations in HT. Let the keys in K and addresses in L are Integers. Develop a Program in C that uses Hash function H: K →L as H(K)=K mod m (remainder method), and implement hashing technique to map a given key K to the address space L. Resolve the collision (if any) using linear probing.	CSE
890.	Develop a C++ program to find the largest of three numbers	CSE
891.	Develop a C++ program to sort the elements in ascending and descending order.	CSE
892.	Develop a C++ program using classes to display student name, roll number, marks obtained in two subjects and total score of student	CSE
893.	Develop a C++ program for a bank empolyee to print name of the employee, account_no. &balance.Print invalid balance if amount<500, Display the same, also display the balance after withdraw and deposit.	CSE
894.	Develop a C++ program to demonstrate function overloading for the following prototypes. add(int a, int b) add(double a, double b	CSE
895.	Develop a C++ program using Operator Overloading for overloading Unary minus operator.	CSE
896.	Develop a C++ program to implement Multiple inheritance for performing arithmetic operation of two numbers	CSE
897.	Develop a C++ program using Constructor in Derived classes to initialize alpha, beta and gamma and display corresponding values.	CSE
898.	Develop a C++ program to create a text file, check file created or not, if created it will write some text into the file and then read the text from the file.	CSE
899.	Develop a C++ program to write and read time in/from binary file using fstream	CSE
900.	Develop a function which throws a division by zero exception and catch it in catch block. Write a C++ program to demonstrate usage of try, catch and throw to handle exception.	CSE
901.	Develop a C++ program that handles array out of bounds exception using C++.	CSE
902.	a) Write a python program to find the best of two test average marks out of three test's marks accepted from the user. b) Develop a Python program to check whether a given number is palindrome or not and also count the number of occurrences of each digit in the input number.	CSE
903.	a) Defined as a function F as Fn = Fn-1 + Fn-2. Write a Python program which accepts a value for N (where N >0) as input and pass this value to the function. Display suitable error message if the condition for input value is not followed.	CSE

	b) Develop a python program to convert binary to decimal, octal to hexadecimal using functions.	
904.	a) Write a Python program that accepts a sentence and find the number of words, digits, uppercase letters and lowercase letters. b) Write a Python program to find the string similarity between two given strings	CSE
905.	a) Write a Python program to Demonstrate how to Draw a Bar Plot using Matplotlib. b) Write a Python program to Demonstrate how to Draw a Scatter Plot using Matplotlib.	CSE
906.	a) Write a Python program to draw Time Series using Plotly Libraries. b) Write a Python program for creating Maps using Plotly Libraries.	CSE
907.	Familiarization with computer hardware and programming environment, concept of naming the program files, storing, compilation, execution and debugging, taking any simple C – Code.	CSE
908.	Develop a program to compute the roots of a quadratic equation by accepting the coefficients. (No built-in math function)	CSE
909.	Develop a program to compute the roots of a quadratic equation by accepting the coefficients. Print appropriate messages.	CSE
910.	Develop a program to find the reverse of a posit integer and check for PALINDROME or NOT. Display appropriate messages. Ex: Num: 2014, Reverse: 4102, Not a Palindrome.	CSE
911.	An electricity board charges the following rates for the use of electricity: for the first 200 units 80 paise per unit: for the next 100 units 90 paise per unit: beyond 300 units Rs 1 per unit. All users are charged a minimum of Rs. 100 as meter charge. If the total amount is more than Rs. 400, then an additional surcharge of 15% of total amount is charged. Write a program to read the same of the user, number of units consumed and print out the charges.	CSE
912.	Introduce 1 D Array manipulation and implement Binary search.	CSE
913.	Implement using functions to check whether the given number is prime and display appropriate messages. (No built-in math function).	CSE
914.	Develop a program to introduce 2D Array manipulation and implement Matrix multiplication and ensure the rules of manipulation are checked.	CSE
915.	Develop a program to compute Sin(x) using Taylor series approximation. Compare your result with the built-in Library function. Print both the results with appropriate messages.	CSE
916.	Write functions to implement string operations such as compare, concatenate, string length. Convince the parameter passing techniques.	CSE
917.	Develop a program to sort the given set of N numbers using Bubble sort.	CSE
918.	Develop a program to find the square root of a given number N and execute for all possible inputs with appropriate messages. Note: Don't use library function sqrt (n).	CSE
919.	Implement structures to read, write and compute average marks for a class of N students.	CSE
920.	Develop a program using pointers to compute the sum, mean and standard deviation of	CSE

	all elements stored in an array of n real numbers.	
921.	Implement Recursive functions for Binary to Decimal Conversion.	CSE
922.	2D-Plots of Cartesian and Polar Curves	Mathematics
923.	Finding Angle Between Two Polar Curves, Curvature and Radius of Curvature	Mathematics
924.	Finding Partial Derivatives and Jacobian	Mathematics
925.	Taylor Series Expansion and L'Hospital's Rule	Mathematics
926.	Solution of First Order Differential Equations and Plotting the Solution Curve	Mathematics
927.	Numerical Solution of System of Equations, Test for Consistency and GraphicalRepresentation of the Solution.	Mathematics
928.	Solution of Linear Equations by Gauss-Seidel Method	Mathematics
929.	Compute Eigen Value and Corresponding Eigen Vectors, Find the Dominant Eigen Value and Corresponding Eigen Vector by Rayleigh Power Method.	Mathematics
930.	Finding GCD Using Euclid's Algorithm	Mathematics
931.	Solve Linear Congruence of the Form $ax \equiv b(\mathrm{mod} n)$	Mathematics
932.	Progamme to Compute Area, Volume and Center of Gravity	Mathematics
933.	Evaluation of Improper Integrals	Mathematics
934.	Solution of Second Order Ordinary Differential Equation and Plotting the Solution Curve	Mathematics
935.	Solution of Differential Equation of Oscillations of Spring with Various Load	Mathematics
936.		
937.	Finding gradient, divergent, curl and their geometrical interpretation and Verification of Green's theorem	Mathematics
938.	Solution of algebraic and transcendental equation by Regula-Falsi and Newton-Raphson method	Mathematics
939.	Interpolation /Extrapolation using Newton's forward and backward difference formula	Mathematics
940.	Computation of area under the curve using Trapezoidal, Simpson's $1/3^{rd}$ rule and $3/8^{th}$ rule	Mathematics
941.	Solution of ODE of first order and first degree by Taylor's series and Modified Euler's method	Mathematics
942.	Solution of ODE of first order and first degree by Runge-Kutta 4th order method and Milne's predictor and corrector method	Mathematics

943.	Programme to compute area, volume and center of gravity.	Mathematics
944.	Evaluation of improper integrals , Beta and Gamma functions.	Mathematics
945.	Computation of basis and dimension for a vector space and graphical representation of linear transformation	Mathematics
946.	Computing the inner product and Orthogonality	Mathematics
947.	Verification of Green's theorem	Mathematics
948.	Solution of Lagrange's linear partial differential equations	Mathematics
949.	Computation of basis and dimension for a vector space and graphical representation of linear transformation	Mathematics
950.	Visualization in time and frequency domain of standard functions	Mathematics
951.	Computing Laplace transform and inverse Laplace transform of standard functions	Mathematics
952.	Laplace transform of convolution of two functions	Mathematics
953.	Determination of wavelength of LASER using Diffraction Grating.	Physics
954.	Determination of acceptance angle and numerical aperture of the given Optical Fiber.	Physics
955.	Determination of Magnetic Flux Density at any point along the axis of a circular coil.	Physics
956.	Study the I-V Characteristics of the Given Bipolar Junction Transistor.	Physics
957.	Determination of dielectric constant of the material of capacitor by Charging and Discharging method.	Physics
958.	Study the Characteristics of a Photo-Diode and to determine the power responsivity / Verification of Inverse Square Law of Intensity of Light.	Physics
959.	Study the frequency response of Series & Parallel LCR circuits.	Physics
960.	Determination of Planck's Constant using LEDs.	Physics
961.	Determination of Fermi Energy of Copper.	Physics
962.	Determination of Energy gap of the given Semiconductor.	Physics
963.	Determination of Young's modulus of the material of the given bar Uniform Bending.	Physics
964.	Determination of Rigidity modulus of the Material of the wire using Torsional Pendulum.	Physics
965.	Study of Forced Mechanical Oscillations and Resonance.	Physics
966.	Determination of effective spring constant of the given springs in series and parallel combinations.	Physics
967.	Determination of Young's modulus of the material of the given bar Single Cantilever.	Physics
968.	Determination of the Moment of Inertia of the given irregular body using torsional pendulum.	Physics
969.	Determination of the Radius of Curvature of the given Plano Convex Lens by setting Newton's Rings.	Physics
970.	Estimation of total hardness of water by EDTA method.	Chemist

		ry
971.	Conductometric estimation of acids in acid mixture.	Chemistry
972.	Potentiometric estimation of FAS using $K_2Cr_2O_7$	Chemistry
973.	Determination of pKa of vinegar using pH sensor(Glass electrode).	Chemistry
974.	Estimation of iron in TMT bar by external indicator method.	Chemistry
975.	Estimation of Copper present in electroplating effluent by optical sensor.	Chemistry
976.	Determination of Viscosity coefficient of lubricant using Ostwald's Viscometer.	Chemistry
977.	Determination of Chemical oxygen demand ofindustrial waste water sample.	Chemistry
978.	Synthesis of iron oxide nano particles.	Chemistry
979.	Determination of strength of an acid in Pb-acid.	Chemistry
980.	Electrolysis of Water Experiment	Chemistry
981.	Synthesis of polyurethane	Chemistry
982.	Construction of photovoltaic cell	Chemistry
983.	Design an experiment to identify the presence of proteins in given sample	Chemistry
984.	Electroless plating of Nickel on Copper	Chemistry
985.	Synthesis of polyaniline and its conductivity measurement	Chemistry
986.	Electroplating of desired metal on substrate	Chemistry
987.	Synthesis of biodiesel	Chemistry
988.	Analysis of cement for its components	Chemistry
989.	C Program to find Mechanical Energy of a particle using the formula $E = m \times g \times h + {}^1/_2(mv^2)$	EEE
990.	C Program to convert Kilometers into Meters and Centimeters.	EEE
991.	C Program To Check the Given Character is Lowercase or Uppercase or Special Character.	EEE
992.	Program to balance the given Chemical Equation values x, y, p, q of a simple chemical equation of the type: The task is to find the values of constants b1, b2, b3 such that the	EEE

	equation is balanced on both sides and it must be the reduced form. Generic Chemical Equation Form $b_1 * A_x + b_2 * {}_{By} \Rightarrow b_3(A_pB_q)$	
993.	Implement Matrix multiplication and validate the rules of multiplication.	EEE
994.	Compute sin(x)/cos(x) using Taylor series approximation. Compare your result with thebuilt-in library function. Print both the results with appropriate inferences.	EEE
995.	Sort the given set of N numbers using Bubble sort.	EEE
996.	Write functions to implement string operations such as compare, concatenate, string length. Convince the parameter passing techniques.	EEE
997.	Implement structures to read, write and compute average- marks and the students scoringabove and below the average marks for a class of N students.	EEE
998.	Develop a program using pointers to compute the sum, mean and standard deviation of allelements stored in an array of N real numbers.	EEE
999.	Familiarization with computer hardware and programming environment, concept of naming the program files, storing, compilation, execution and debugging, taking any simple C – Code.	CSE
1000	Develop a program to compute the roots of a quadratic equation by accepting the coefficients. (No built-in math function)	CSE
1001	Develop a program to compute the roots of a quadratic equation by accepting the coefficients. Print appropriate messages.	CSE
1002	Develop a program to find the reverse of a posit integer and check for PALINDROME or NOT. Display appropriate messages. Ex: Num: 2014, Reverse: 4102, Not a Palindrome.	CSE
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1004	Introduce 1 D Array manipulation and implement Binary search.	CSE
1005	Implement using functions to check whether the given number is prime and display appropriate messages. (No built-in math function).	CSE
1006	Develop a program to introduce 2D Array manipulation and implement Matrix multiplication and ensure the rules of manipulation are checked.	CSE
1007	Develop a program to compute Sin(x) using Taylor series approximation. Compare your result with the built-in Library function. Print both the results with appropriate messages.	CSE
1008	Write functions to implement string operations such as compare, concatenate, string length. Convince the parameter passing techniques.	CSE
1009	Develop a program to sort the given set of N numbers using Bubble sort.	CSE
1010	Develop a program to find the square root of a given number N and execute for all	CSE

1011	Implement structures to read, write and compute average marks for a class of N students.	CSE
1012	Develop a program using pointers to compute the sum, mean and standard deviation of all elements stored in an array of n real numbers.	CSE
1013	Implement Recursive functions for Binary to Decimal Conversion.	CSE
1014	CAED	
1015	Orthographic Projections of Points	ME
1016	Orthographic Projections of Lines	ME
1017	Orthographic Projections of Planes	ME
1018	Orthographic Projections of Solids	ME
1019	Conversion of Orthographic Projections to Isometric Projections	ME
1020	Conversion of Isometric Projections to Orthographic Projections	ME
1021	Development of Lateral Surfaces	ME

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