



S J P N Trust's
Hirasugar Institute of Technology, Nidasoshi.

Inculcating Values, Promoting Prosperity

Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi.

EEE Dept.

Exam.

Internal Assessment

Odd sem(2018-19)

FIRST INTERNAL ASSESSMENT

Sem :V

Sub: Electrical Estimation and Costing

Sub. Code: 15EE553

Date:12/09/2018

Time:11:00AM-12.00 Noon

Max. Marks: 25

Note: Answer two full questions, draw sketches wherever necessary.

Q.N	Discription of Question		M	CO	RBT L
1	a	Describe the various systems of distribution of electrical energy for internal wiring	7	305P3.4	L2
	b	Describe the various types of wires or cables usually used in internal wiring of buildings	6	305P3.4	L3
OR					
2	a	List the general rules to be followed for internal wiring.	4	305P3.5	L2
	b	Draw the wiring plan and estimate the quantity of material required for PVC casing-capping system used in a house, the plan of which is shown in fig.1. Assume the height of ceiling as 3.6 metres and one plug point is to be provided in each room.	9	305P3.5	L4
<p style="text-align: center;">Fig.1. Plan of a house</p>					
3	a	Explain the different types of overhead service connection.	6	305P3.6	L2
	b	With neat figure, explain the installation of under ground service connection.	6	305P3.6	L2
OR					
4	a	Write short note on installation of service line for low roof or single storeyed building.	4	305P3.6	L2
	b	A farmer requires to connect a 3-phase 37 KW, 415V, 50Hz motor to a 3-phase 4-wire, 415/240V, 50Hz overhead line. The distance of the service line from the farmer structure having motor is 15m. The motor has an efficiency of 85% and a power factor of 0.8. Estimate the quantity and cost of material required.	8	305P3.6	L4

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HOD 11.9.18



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E & E Dept

Exam

IA Scheme

2018-19 (Odd)

SCHEME OF EVALUATION IA - I

Page No : 1 / 4

SEM: V	SUBJECT: Electrical Estimation & Costing	SUBJECT CODE: 15EE553	DATE: 12/9/18	
Q.No.	Bits	DESCRIPTION	Marks	CO's
1	a	To draw Schematic diagram of i) distribution board system -2 ii) Tise system -2 Explanation of both system -3	7m	30SP3.4
	b.	To describe the various types (At least 2) of wires or cables used in internal wiring 1) VIR 2) TRS 3) Lead sheathed 4) PVC 5) Flexible cab.	6m	30SP3.4
2	a	To list atleast four general rules for internal wiring	4m	30SP3.5
	b.	To draw wiring plan Calculation of full load current - 1m Calculation of length of PVC casing & application length of phase & neutral wire - 1m Estimation of material - 4m	9m	30SP3.5
3	a	To explain types of overhead service (At least two)	6m	30SP3.6
	b.	To draw underground service connection figure -3 For explanation -3	6m	30SP3.6
4	a.	To draw figure of low roof service line -3m Explanation -2m	5m	30SP3.6
	b.	To calculate load current & ft. current -2m Calculate length of cable required -2m Estimation of material with cost -4m	8m	30SP3.6

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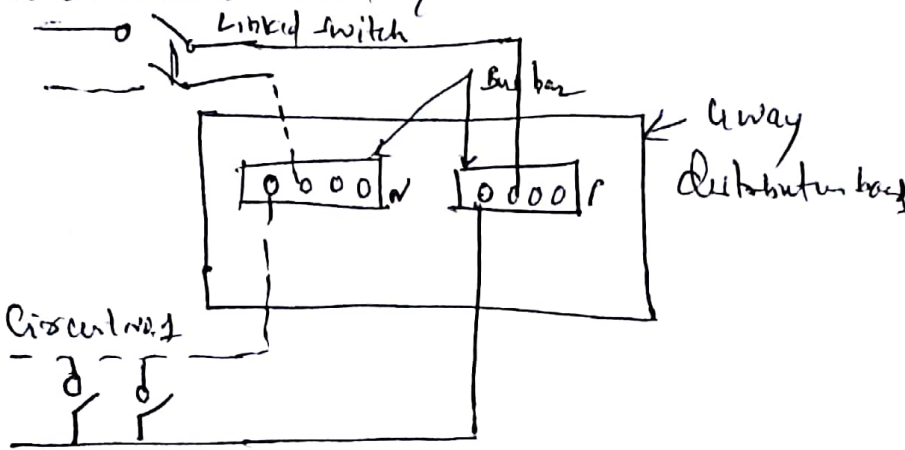
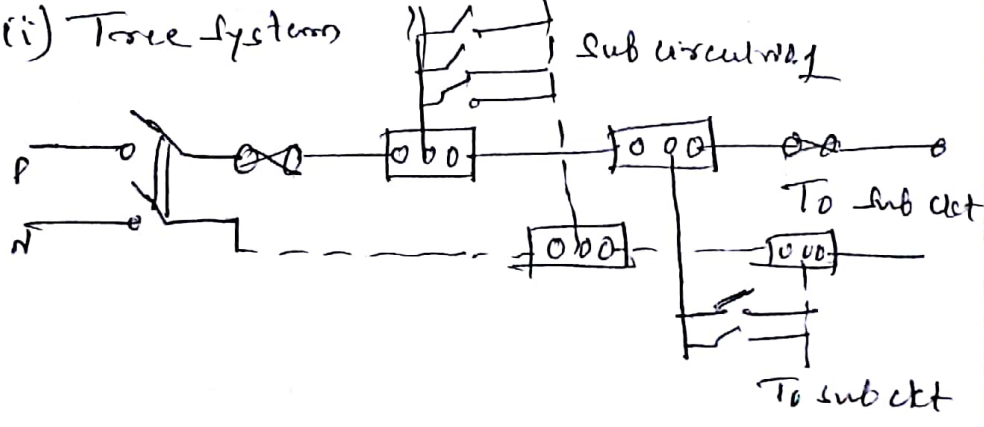
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SCHEME OF EVALUATION IA - I

Page No : 2/4

SEM: V	SUBJECT: Electrical Estimation & Costing	SUBJECT CODE: EEEESS3	DATE: 12/9/18		
Q.No.	Bits	DESCRIPTION		Marks	CO's
1	a	<p>Systems of Distribution</p> <p>i) Distribution board system</p>  <p>ii) Tree system</p> 			
	b.	<p>Types of Wires or Cables used in internal wiring According to type of insulation</p> <p>i) VIR cable ii) TRS or CR cable iii) Lead sheathed 4) P.V.C Cable 5) Flexible Cords</p> <p>Acc. to conductor used → Al & Cu. Acc to no. of cores - single core, twin core, three core Acc to voltage grading - i) 250/440V & ii) 650/1100V</p>			


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SCHEME OF EVALUATION IA - I

Page No: 3/4

SEM: V	SUBJECT: Electrical Estimation & Costing	SUBJECT CODE: EEE553	DATE: 12/9/18	
Q.No.	Bits	DESCRIPTION	Marks	CO's
2	9	<p>General rules for internal wiring</p> <ol style="list-style-type: none"> Every sub ckt is to be connected to a d.B. All plugs & sockets outlets are to be 3-pin type. In one light pt for sub-ckt the maximum load 800 watts & no. of points 10 & is permitted 3000w. All light conductors are to insulated. <p>b.</p> <p style="text-align: center;">Wiring Plan</p> <p>Full load current $I = \frac{480}{240} = 2A$</p> <p>Length of PVC casing & capping = 27 mt</p> <p>Length of Phase wire = 57.5 mt</p> <p>Neutral wire = 39.5 mt.</p> <p>Total length of conductors = 90 mt</p> <p>Length of earth wire = 6m (0.2 kg)</p> <p>Length of conduit of 19mm size = 0.5 m</p> <p><u>Assumptions:</u></p> <p>Height of MB & SB = 1.5 mtrs Height of light point = 2.4 mtrs.</p> <p>height of casing & capping run = 3 mt</p>		

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SCHEME OF EVALUATION IA - I

Page No : 4/4

SEM: V	SUBJECT: Electrical Est & Costing	SUBJECT CODE: 15EE152	DATE: 12/9/18	
Q.No.	Bits	DESCRIPTION	Marks	CO's
3	a	Types of overhead service connection i) High roof bldg ii) low roof or single storied bldg iii) weather proof cable iv) use of junction box		
	b	Installation of underground service connection		
4	a.	Service ladder for low roof building		
	b.	Motor Building Current $I_f = \frac{37 \times 1000}{\sqrt{3} \times 415 \times 0.85 \times 0.1} = 75.7 A$ Starting current $I_{st} = 1.5 \times I_f = 113.6 A$ Total length of cable req = 26m Total cost of the installation Rs 40,714.200		

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