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Hirasugar Institute of Technology, Nidasoshi.

Inculcating Values, Promoting Prosperity

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ECE Dept.

Exam.

Internal Assessment

Odd Sem(2018-19)

SECOND INTERNAL ASSESSMENT

Sem: VII

Sub: Satellite Communication

Sub. Code:15EC755

Date: 17/10/2018

Time: 11am -12 noon

Max. Marks:25

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

Q. No	Description of Question	Marks	CO	RBT Level
1	a Explain earth station architecture with neat block diagram.	7	C405a.2	L2
	b Explain basic block diagram arrangement of regulated bus power supply of a satellite system.	6	C405a.2	L2
OR				
2	a Explain types of tracking system.	7	C405a.2	L2
	b Explain mandatory types of earth station testing.	6	C405a.2	L2
3	a Explain basic elements of a satellite telecommunication system	6	C405a.4	L2
	b Mention advantages and disadvantages of satellite over terrestrial networks	6	C405a.4	L2
OR				
4	a Explain DTH TV	6	C405a.4	L2
	b Explain satellite telephony with connectivity steps.	6	C405a.4	L2


Prof. S. B. Akkole

Course Coordinator


Prof. S. B. Akkole

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Dr. V. G. Kasabegondar

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IA -2 SCHEME OF EVALUATION

SEM:VII	SUBJECT: Satellite Communication	SUBJECT CODE:15EC755	DATE:17/10/2018		
Q.No.	Bits	DESCRIPTION	Marks	CO's	RBT Level
1	a	<p>Explaining earth station architecture-4M + Neat block diagram-3M</p> <p style="text-align: center;">Block schematic arrangement of a generalized Earth station.</p> <p>Explaining RF Section, Baseband Section, Terrestrial Interface and Support Facilities.</p>	7	C405a.2	L2
	b	<p>Explaining basic block diagram arrangement of regulated bus power supply of a satellite system -3M + Explanation 4M</p> <p style="text-align: center;">Basic block schematic arrangement of a regulated bus power supply system</p> <p>Voltage regulation during the sunlight and eclipse periods is achieved by decoupling the battery from the bus. During the sunlight condition. The voltage of the solar generator and also the bus is maintained at a constant amplitude with the voltage regulator connected across the solar generator. During the eclipse periods, the battery provides power to the bus at a constant voltage again and the voltage is maintained constant by means of the battery discharge regulator BDR</p>	6	C405a.2	L2



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IA -2 SCHEME OF EVALUATION

DATE: 17/10/2018

SEM: VII	SUBJECT: Satellite Communication	SUBJECT CODE: 15EC755	Marks	CO's	RBT Level
Q.No.	Bits	DESCRIPTION			
2	a	<p>Mentioning types of tracking system-2M. i) Lobe Switching ii) Sequential Switching iii) Conical Scan iv) Mono Pulse Tracking v) Step Track vi) Intelligent Tracking.</p> <p>Explaining any 5 each 1M</p>	7	C405a.2	L2
	b	<p>Lobe switching</p> <p>Explaining any 3 mandatory types of earth station testing 2x3=6M</p> <ol style="list-style-type: none"> Transmit Cross polarization Receiver figure of Merit EIRP stability Spectral shape 	6	C405a.2	L2

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IA -2 SCHEME OF EVALUATION

SEM: VII	SUBJECT: Satellite Communication	SUBJECT CODE: 15EC755	DATE: 17/10/2018		
Q.No	Bits	DESCRIPTION	Marks	CO's	RBT Level
3	a	<p>Explaining basic elements of a satellite telecommunication system-3M and</p> <p>Block diagram -3M</p> <p>Basic elements of a satellite communication system.</p>	6	C405a.4	L2
	b	<p>Mentioning 4 advantages with explanation 1X4=4M</p> <p>i) Broadcast Property-wide coverage area ii) High transmission speed and large transmission capacity iii) Independence of location iv) Easy installation of ground stations v) Uniform service characteristics vi) Immunity to natural disasters vii) low cost and distance insensitive.</p> <p>Any 2 disadvantages with explanation 1x2=2 of satellite over terrestrial networks.</p> <p>i) Delay in communication ii) It is impossible to repair of satellite iii) Launch cost of satellite is high iv) Echo effects</p>	6	C405a.4	L2



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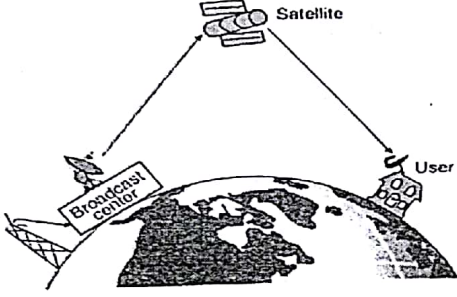
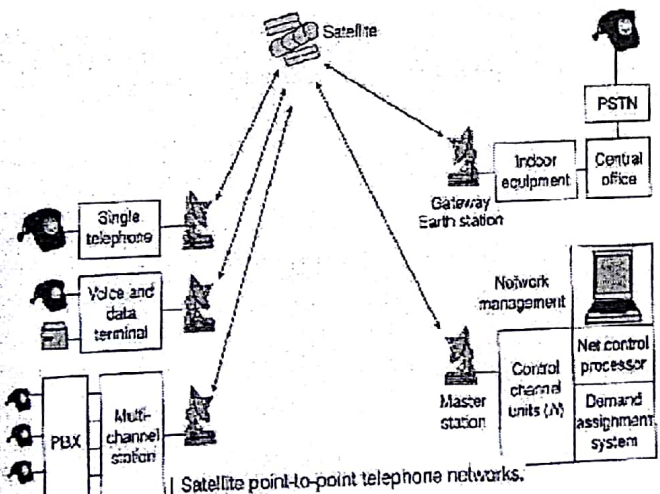
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SEM:VII		SUBJECT: Satellite Communication		SUBJECT CODE:15EC755		DATE:17/10/2018		
Q.No	Bits	DESCRIPTION				Marks	CO's	RBT Level
4	a	<p>Explaining DTH TV- 4 M and Sketching the Block diagram DTH TV -2M</p> <p>Direct-to-Home (DTH) Satellite Television DTH satellite television refers to the reception of satellite TV programs by the end users directly from the satellite through their own receiving antennas as shown below figure. DTH services can be broadly classified into two types, namely the television receive-only (TVRO) and the direct broadcast satellite (DBS) services, depending upon the frequency band utilized and the size of the receiving antennas. TVRO systems operate in the C band whereas the DBS systems operate in the Ku band. In the present context when one talks of DTH systems, more often than not it refers to DBS systems only</p>  <p style="text-align: center;">DTH satellite television.</p>				6	C405a.4	L2
	b	<p>Explaining satellite telephony with connectivity steps-4M and Sketching the Block diagram of it -2M</p>  <p style="text-align: center;">Satellite point-to-point telephone networks.</p>				6	C405a.4	L2

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SEM:VII		SUBJECT: Satellite Communication	SUBJECT CODE:15EC755	DATE:17/10/2018		
Q.No	Bits	DESCRIPTION	Marks	CO's	RBT Level	
4	b	<p>Satellite provides both long distance point to point trunk telephony services as well as mobile telephony services either to complement or to bypass terrestrial networks. The various steps involved in connecting telephony are.</p> <ol style="list-style-type: none"> 1. The user lifts the receiver when he wants to make a call. This sends a request to the local Earth station, which in turn sends a service request to the master station. 2. If the master station is able to provide the satellite capacity, it sends a confirmation signal to the local Earth station resulting in a dial tone in the telephone instrument. 3. The user then dials the destination number, which is transferred to the control station, which determines the destination Earth station and signals it that a connection needs to be established. 4. The destination Earth station then signals the called party of the incoming call by ringing that telephone instrument. 5. Satellite capacity is allocated to the connection and the telephone link is established once the called party lifts the handset. 6. Once the conversation is over, the calling party hangs up the receiver, hence indicating to the local Earth station to terminate the call 	6	C405a-4	L2	


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