Program: B.E. (ELECTRONICS & TELE-COMMN)(REV-2012)(Sem VIII) (CBSGS)

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VIII

Course Code: **ETC802** and Course Name: **Satellite Communication & Networks**

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	_____ law states that the path followed by the satellite around the primary will be an ellipse.
Option A:	Newton's 1st law
Option B:	kepler's first law
Option C:	kepler's second law
Option D:	kepler's third law
Q2.	What is the angle of inclination for a satellite following an equatorial orbit?
Option A:	0°
Option B:	180°
Option C:	45°
Option D:	90°
Q3.	Calculate the radius of a circular orbit for which the period is 1 day?
Option A:	42241Km
Option B:	42241m
Option C:	42001Km
Option D:	2241Km
Q4.	How many stages are there in PSLV?
Option A:	4
Option B:	3
Option C:	2
Option D:	1
Q5.	For a geostationary satellite, the orbital radius is the distance measured from the
Option A:	Sub-satellite point to satellite
Option B:	Centre of earth to the satellite
Option C:	Earth station to the satellite
Option D:	Centre of earth to the subsatellite point
Q6.	Attitude & orbit control system (AOCS), consists of
Option A:	Rocket motors that are used to move the satellite back to the correct orbit when external forces causes it to drift
Option B:	Rocket motors are not contained

Option C:	Rocket motors are contained but they cannot move the satellite back to the correct orbit when external forces causes it to drift
Option D:	Three phase motors that are used to move the satellite back to the correct orbit when external forces causes it to drift
Q7.	Where is the Telemetry, Tracking & Command (TT&C), present?
Option A:	This is not partly on the satellite but partly on the controlling earth station
Option B:	This is partly on the satellite and partly on the controlling earth station
Option C:	Not at all present in the satellite
Option D:	This is partly on the satellite but not partly on the controlling earth station
Q8.	The transponder forms one of the main sections of the payload, the other being:_____
Option A:	The antenna subsystems
Option B:	The earth station is receiving the signal and the satellite is transmitting it
Option C:	signal transmission
Option D:	signal reception
Q9.	The quality of a space-link is measured in terms of the _____ ratio.
Option A:	S/N
Option B:	G/T
Option C:	C/N
Option D:	EIRP
Q10.	OSI stands for _____
Option A:	open system interconnection
Option B:	operating system interface
Option C:	optical service implementation
Option D:	open service Internet
Q11.	Which technique uses two different antennas to reduce traffic on the same frequency?
Option A:	Spatial isolation
Option B:	Frequency reuse
Option C:	Multiplexing
Option D:	Modulation
Q12.	What is the reason for carrying multiple transponders in a satellite?
Option A:	More number of operating channel
Option B:	Better reception
Option C:	More gain
Option D:	Redundancy
Q13.	_____ detects the satellite signal relayed from the feed and converts it to an electric current, amplifies and lower its frequency.
Option A:	Horn antenna
Option B:	LNA

Option C:	Satellite receiver
Option D:	Satellite dish
Q14.	Which is the disadvantage of TDMA?
Option A:	TWTA can be operated near saturation
Option B:	Need of clock synchronization among inputs.
Option C:	No intermodulation, as there is one carrier in transponder at a time.
Option D:	Full bandwidth and Max EIRP
Q15.	What does privacy mean in CDMA?
Option A:	Sequence has property of randomness
Option B:	Full allotted spectrum can be utilized
Option C:	Frequency selective fading does not affect the system
Option D:	Only a small portion of spectrum is affected by jamming signal
Q16.	What is the reason for shifting from C- band to Ku-band in satellite communication?
Option A:	Lesser attenuation
Option B:	Less power requirements
Option C:	More bandwidth
Option D:	Overcrowding
Q17.	Relation between gain and effective aperture is given by _____
Option A:	$G=(4\pi A_e)/\lambda^2$
Option B:	$G=(4\pi \lambda^2)/A_e$
Option C:	$G=4\pi A_e$
Option D:	$G=A_e/\lambda^2$
Q18.	The Link-Power Budget Equation?
Option A:	[PR] =[EIRP] +[GR]
Option B:	[PR] =[EIRP] +[GR] -[LOSSES]
Option C:	[LOSSES] =[FSL] +[RFL] +[AML]
Option D:	[LOSSES] =[FSL] +[AA] +[PL]
Q19.	Which of the following is not applicable for IP?
Option A:	Error reporting
Option B:	Handle addressing conventions
Option C:	Datagram format
Option D:	Packet handling conventions
Q20.	For optical satellite communication systems many laser sources can be used such as_____, semiconductor lasers, gas lasers etc.
Option A:	PN Diode
Option B:	Single heterodyne
Option C:	Solid state lasers
Option D:	Double heterodyne

Q21.	A satellite downlink at 12 GHz operates with a transmit power of 6 W and an antenna gain of 48.2 dB. Calculate the EIRP in dBW.
Option A:	56 dBW
Option B:	16 dBW
Option C:	56 dB
Option D:	16 dB
Q22.	While keeping the down-link frequency constant, the diameter of a satellite antenna is reduced by half. To offer the same EIRP over the increased coverage area, the RF output power has to be increases by a factor of
Option A:	2
Option B:	4
Option C:	8
Option D:	16
Q23.	What is the maximum theoretical data rate if a transponder is used for binary transmission and has a bandwidth of 36MHz?
Option A:	32Mpbs
Option B:	72Mpbs
Option C:	36Mpbs
Option D:	12Mpbs
Q24.	Assume in each frame, Number of Earth Station = 15, Number of Reference bursts = 2, Reference Bursts = 576 bits, Preamble for each user burst = 560 bits and Guard time equivalent number of bits = 128 bits. What is the number of overhead bits?
Option A:	11472 bits
Option B:	11600 bits
Option C:	11728 bits
Option D:	11856 bits
Q25.	What is the free space attenuation of a satellite communications system operating at 36,000 km above the earth at 5.0 GHz?
Option A:	138 dB
Option B:	202 dB
Option C:	142 dB
Option D:	198 dB