Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VIII

Course Code: ETC802 and Course Name: Satellite Communication Network

Time: 1 hour Max. Marks: 50

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

1)	What is the number of GPS satellites used?
a.	12
b.	24
c.	36
d.	48
2)	The line joining the perigee and apogee through the centre of the earth is defined as:
a.	Line of nodes
b.	Line of Apsides
c.	Argument of Perigee
d.	Mean Anomaly
3)	A geostationary satellite is located at 90°W. Calculate the azimuth angle for an earth-station antenna at latitude 35°N and longitude 100°W.
a.	197.1°
b.	162.9°
c.	342.9°
d.	17.1°
4)	Which Law suggest that "for equal time intervals, a satellite will sweep out equal areas in its orbital plane, focused at the barycentre "
a.	Kepler's 1st law of satellite motion
b.	Newtons third law of motion
c.	Kepler's 2nd law of satellite motion
d.	Kepler's 3rd law of satellite motion
5)	The inclination for retrograde orbit is
a.	Between 90 and 180 degrees
b.	Between 0 and 90 degrees
c.	Between 180 and 270 degrees
d.	Between 270 and 360 degrees
6)	Hohmann orbit is used to
a.	Launch a satellite
b.	Transfer a satellite
c.	GPS Satellites

d.	Communication satellites
7)	The series of interconnected units which forms a single communications channel between the receive and transmit antennas in a communications satellite.
a.	Antenna subsystem
b.	TT&C subsystem
c.	Thermal subsystem
d.	Transponder
8)	The linear region of TWT drops at
a.	Output back off
b.	1-dB compression point
c.	Intermodulation Interference
d.	Input back off
9)	The flux density required at the receiving antenna to produce saturation of TWTA is
a.	Power Spectral Density
b.	Noise Spectral Density
c.	Saturation flux Density
d.	Magnetic flux Density
10)	Spin stabilization is an example of
a.	Active Attitude Control
b.	Hybrid Attitude Control
c.	Passive Attitude Control
d.	None of these
11)	The degradation of satellite solar cells with time is mainly due to
a.	their bombardment by electrons
b.	collection of meteoric dust
c.	increase in resistivity of silicon
d.	gradual leakage of charge carriers from the semiconductor material
12)	Calculate the gain in decibels of a 3-m paraboloidal antenna operating at a frequency of 12 GHz. Assume an aperture efficiency of 0.55.
a.	48.9 dB
b.	48.2 dB
c.	47.5dB
d.	49.4 dB
13)	An LNA is connected to a receiver which has a noise figure of 12 dB. The gain of the LNA is 40 dB, and its noise temperature is 120 K. Calculate the overall noise temperature referred to the LNA input.
a.	120.43 K
b.	150.21 K
c.	140.2 K
d.	125.5 K

14)	Effective radiated power of an isotropic radiator is given as a product of
a.	Effective area and physical area
b.	Radiated power and received power
c.	Transmitted power and transmitting gain
d.	Receiving power and receiving gain
15)	A satellite signal transmitted from a to earth's station to satellite transponder is called as
a.	Uplink
b.	Downlink
c.	Terrestrial
d.	Earth bound
16)	In satellite communication, highly directional antennas are used to
a.	direct the spot beam to a particular region of space on Earth
b.	strengthen the beam to overcome the cosmic noise
c.	make corrections in change of polarisation of the beam
d.	select a particular channel in transmission and reception
17)	Which of the following are common baseband signals transmitted from the earth ground station?
a.	Navigational data, computer data, video
b.	Computer data, navigational data, voice
c.	Voice, video, computer data
d.	Computer data
18)	The device that detects both vertically and horizontally polarized signals simultaneously.
a.	Diplexer
b.	Opto-isolator
c.	Ortho mode transducer
d.	Crystal detector
19)	A type of satellite's multiple-accessing method that allows all users continuous and equal access of the entire transponder bandwidth by assigning carrier frequencies on a temporary basis using statistical assignment process.
a.	TDMA
b.	FDMA
c.	DAMA
d.	CDMA
20)	In some phase detection systems, the phase detector must be allowed for some time to recover from one burst before the next burst receiving by it. The waiting time is known as_____.
a.	Preamble
b.	Guard time
c.	Frame efficiency
d.	Decoding quenching

21)	The demand-assigned channels utilize digital TASI in INTELSAT referred as
a.	Digital speech interpolation
b.	Speech predictive encoded communications
c.	Time assignment speech interpolation
d.	Space assignment speech interpolation
22)	Frame efficiency of a TDMA frame may be defined as a ratio of
a.	total bits/guard bits
b.	traffic bits/total bits
c.	overhead bits/total bits
d.	overhead bits/traffic bits
23)	Which one of the following task is not done by data link layer?
a.	Framing
b.	Error control
c.	Flow control
d.	Channel coding
24)	Intersatellite links are
a.	Earth to earth
b.	Earth to satellite
c.	Satellite to satellite
d.	Satellite to earth
25)	An optical satellite transmitter does not comprise of
a.	Laser Source
b.	Modulator
c.	Antenna and data handling electronics
d.	demodulator