



BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – B.Tech.(ECE)-2020
Course Name – Satellite Communication
Course Code - PEC-ECEL703A
(Semester VII)

Statuted by Berginst

Full Marks	:	60
------------	---	----

Time: 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

G	ro	u	D	-A

(Multiple Choice Type Question)

1 x 15=15

- Choose the correct alternative from the following :
- (i) Identify the bands cannot be used for satellite communication?
 - a) MF

b) Ku

:) X

d) C

- (ii) State, Why are techniques like frequency reuse and spatial isolation carried out?
 - a) Reduce traffic load

b) More gain

c) High speed

d) Error detection

- (iii) Name the technique uses spot beam antennas to divide the area covered by the satellite into smaller segments?
 - a) Spatial isolation

b) Frequency reuse

c) Multiplexing

d) Modulation

- (iv) Write the part which is not a part of the propulsion subsystem of a satellite?
 - a) Gyroscope

b) Jet thruster

c) AKM

d) Fuel control system

- (v) Calculate the number of transponders if the satellite uses 12 channels of frequency and frequency reuse is implemented?
 - a) 12

b) 6

9	200	**************************************			
0	200	(c) 24	-11		
1	olvi	c) 24) Indicate, the Advantage of TDMA is	a)	3	
Ü		 a) The transponder traveling wave tube can be operated at less power o/p 	b)	The transponder traveling wave tube can be operated at maximum power o/p	9
		 c) The transponder traveling wave tube can be operated at moderate power o/p 	d)	None of these	
	(vii) The Space Division Multiplexing is a method by w	hich	spot beams are apply to achieve the	
	3	a) Geostationary Orbit	h)	Non-Geostationary Orbit	
		c) Polar Orbit	d)	None of these	
	(VIII	Explain, What happen if a satellite is laun design altitude?	che	ed vertically and released at its	
		a) Continue to orbit the earth	b)	Fall back	
		c) Overshoots the altitude and moves at a		Stays where it was released	
	(ix)	constant speed The direction of orbit in the come direction		C. II. which has been a	
		The direction of orbit in the same dire	ecti	on of earth rotation is name	
		Not place to			
		a) Retrograde	h)		
		-1 D	٠,	Posigrade	
	(x)	c) Perigee The time period taken I all a sure	d)	Apogee	
	(,	The time period taken by the satellite to comp a) Lapsed time	lete	one orbit is identify	
		a, Eupsed time	b)	Time period	
		c) Sidereal period	d)	Unit frequency	
	(xi)	Write the angle of inclination for a get	_119		
		Write the angle of inclination for a saturation or a saturation for a satu	eiii	e following an equatorial	
		a) 0 degree			
		c) 180 degree		45 degree 90 degree	
	(xii)	To use a satellite for communication relay or r	epe	ater purposes name the type of	
		or of which will be the best?	•	, i	
		a) Circular orbit	b)	Elliptical orbit	
		c) Geosynchronous orbit	d)	Triangular orbit	
	(xiii)	Name the point on the surface of the	ear	th that is directly below the	
		satellite called?		The Section of the Se	
		a) Catallita and a			
		a) Satellite pointc) Supersatellite point	p)	Subsatellite point	
(xiv)	State, the transmitter-receiver combin	a) ati	Overhead point	
		as a		or in the sateline is known	
		a) Relay	b)	Repeater	
		٥١		Max.	
		C) Transponder		Duplexer	
(xv)	Describe the reason, why VHF, UHF,	and	microwave signals used in	

satellite communication?

a) More bandwidth	b)	More spectrum space	
 c) Are not diffracted by the ionosphere 	d)	Economically viable	
	up-B		3 x 5=15
(Short Answer	Type	Questions)	2 X 3-13
2. Illustrate the procedure the satellite communication	on sys	tems maintain their orbits.	(3)
3. Explain the POLAR satellites.	•		(3)
4. State about Communication Satellite?		CON OF MASS	(3)
5. Design uplink and downlink.		Libr University Ballis	(3)
		Brainware University Brainware University 398, Ramkinstrator, rest temper Routes Kollala, rest temper Routes	
6. Write the limitations of satellite communication.		208, Raming St. Legel	(3)
■ 100 magain teads 200 magain and 100 magain and 1	OR	33 Kolya	
Write the components of the Earth station.	J.,		(3)
	100		
Gro (Long Answer)	up-C	Questions)	5 x 6=30
(Long Answer	Type	questionsy	
7. Write the different types of satellites on the basis	s of cl	assification.	(5)
8. What do you mean by satellite. Give example	sofn	atural and artificial satellites. Name	(5)
the first artificial satellite, stating its year of la	unchi	ng and the concerned country.	
the first artificial satellite, stating its year of la	uncin	ing and the concerned country.	
			(5)
9. Illustrate LEO, MEO and GEO satellites.			(5)
10. State Kepler's laws of planetary motion. Writ	e dow	n the relation involving time period	1 (5)
of rotation of the satellite, length of semi-maj	or axi	s of the orbit, the mass of the plane	t
and universal constant of gravitation			
44. Emplain the entions of Lider			(5)
11. Explain the actions of Lidar			(3)
			(5)
12. Write the objectives of Radarsat program.			(5)
	OR	6 1 1 1 1 1 W	/- \
Illustrate Apogee and Perigee. Distinguish be		i Solar day and Sideral day. Write	(5)
down the possible causes of orbit perturbation	S.		
**********	****	******	