

Name:
Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2019

Course: Space Science and Communication Technology

Semester: III

Program: B.Sc., LL.B. (Hons.) IPR/ FHEL/ MFL

Time: 03 hrs.

Course Code: CLNL 2028

Max. Marks: 100

Instructions:

S. No.		Marks	CO
Q 1	Match the following:		
	1. Heliocentric	a. Twinkling of stars	1 1
	2. Geocentric	b. Uranus	1 1
	3. Titan	c. Copernicus	1 1
	4. Titania	d. Saturn	1 1
	5. Europa	e. Mars	1 1
	6. First artificial satellite	f. Yuri Gagarin	1 1
	7. Not seen from Moon	g. Sputnik	1 1
	8. First person in space	h. Ptolemy	1 1
	9. Name of our galaxy	i. Jupiter	1 1
	10. Looks reddish in night sky	j. Milky Way	1 1

SECTION B

Q 2	Give full forms of VF, LF, VLF and ELF.	4	2
Q 3	Explain very briefly the terms Celestial Sphere and Ecliptic Plane.	4	1
Q 4	What is meant by Duplex communication? Give some examples of it.	4	2
Q 5	An electromagnetic wave has frequency of 4 MHz. Calculate its wavelength.	4	3
Q 6	What are ASLV and GSLV in the Indian space program?	4	1

SECTION-C

Q 7	What is modulation? Give the different types of analog signal modulations generally used.	5	2
Q 8	Using a schematic diagram and properly labelling the different components, describe a typical digital communication system.	5	2
Q 9	List the types of orbits used to place the satellites in space. Discuss briefly any 3 of them.	5	1

Q 10	Define 'bandwidth'. What are the frequency bands used in satellite communication?	5	2
SECTION-D			
Q 11	Describe elaborately the Chandrayaan missions. Compare the two missions. Discuss their significance for the Indian space program.	15	4
Q 12	What is Remote Sensing? What are the advantages and limitations of Remote Sensing? Explain the term 'atmospheric window' with respect to remote sensing.	20	3
Q 13	What is a 'space station'? How many have been operational till date? Describe any one of them in some detail.	15	4