



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**ONLINE END SEMESTER EXAMINATION**  
**DECEMBER 2020**

**Course : SPACE SCIENCE & COMMUNICATION TECHNOLOGY**

**Semester: V**

**Course Code: CLNL 2028**

**Programme: BScLLB:**

**Max. Marks: 100**

**Instructions:** Read the section headings carefully for Sections A, B and C

**Total pages : 02**

**SECTION A**

**1. Each Question will carry 5 Marks**

**2. Instruction: Complete the statement / Select the correct answer(s)**

Q1	The 5 prominent indigenous satellite launch vehicles of India are; a ....., b ....., c ....., d ..... and e .....	CO4
Q2	Match the following:  1. First man in space 2. First Indian in space 3. First man on Moon 4. First woman of Indian origin in space 5. Woman with record time in space  a. WILLIAMS Sunita b. ARMSTONG Neil c. CHAWLA Kalpana d. GAGARIN Yuri e. SHARMA Rakesh	CO1
Q3	a ....., b ....., c ....., and d ..... are the rocky planets.	CO1
Q4	Match the following:  1. Rohini 2. Titan 3. Aryabhata 4. Titania 5. Triton  a. satellite of Uranus b. satellite of Neptune c. first indigenously launched Indian satellite d. satellite of Saturn e. first Indian satellite	CO1
Q5	An electromagnetic wave has frequency of 4.5 MHz. Calculate its wavelength.	CO3
Q6	a ....., b ....., c ....., d ....., and e ..... are the different types of satellite orbits.	CO2
<b>SECTION B</b>		
<b>1. Each question will carry 10 marks</b>		
<b>2. Instruction: Write short / brief notes</b>		
Q7	Explain briefly the terms Celestial sphere, Ecliptic plane, AU (astronomical unit) and parsec.	CO1

Q8	What is the difference between baseband and broadband transmission? Give the different types of digital signal modulations.	CO2
Q9	Explain in your own words the concept of remote sensing. What according to you are the different means for remote sensing?	CO3
Q10	Giving examples, explain the terms Simplex, Duplex and Half-duplex communication.	CO2
Q11	Quite understandably, 'Resolution' is a very important parameter in remote sensing. Write a note on the 'Resolutions' considered in remote sensing!	CO3
<b>Section C</b>		
<p><b>1. Each Question carries 20 Marks.</b></p> <p><b>2. Instruction: Write long answer.</b></p>		
Q12	<p>India is one of the leading countries in the world in the field of space research. Amongst its many, its Moon and Mars missions are its stellar achievements. Analyze in detail its Moon missions.</p> <p style="text-align: center;">OR</p> <p>Analyze and describe in detail, in your own words its mission(s) to Mars. Highlight the achievements.</p>	CO4