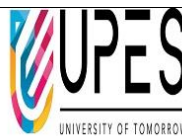


Name:  
Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, May 2023**

**Course:** Space Science and Space Environment  
**Program:** B.Tech ASE  
**Course Code:** ASEG4008

**Semester:** VIII  
**Time** 03 hrs  
**Max. Marks:** 100

**Instructions: All questions are compulsory**

**SECTION A**

S. No.		Marks	CO
Q 1	What are TNOs in our Solar system?	4	CO1
Q 2	How does air pressure change with altitude in Earth's atmosphere?	4	CO3
Q 3	How does a star's mass affect its life cycle?	4	CO2
Q 4	How does the Earth's magnetic field protect us from harmful cosmic radiation?	4	CO3
Q 5	Define the Solar Wind.	4	CO2

**SECTION B**

Q 6	Compare the characteristics of a white dwarf and a black hole	10	CO3
Q 7	Discuss the phenomenon of 'temperature inversion' with respect to the Earth's atmosphere. Discuss the temperature profile of the Earth's atmosphere and the different zones thus delimited.	4 + 6	CO3
Q 8	Differentiate between Meteoroids, Meteors and Meteorites. <b>OR</b> Determine the distance between two planets in the solar system based on their orbital period.	10	CO1
Q 9	Evaluate the potential dangers of a nearby supernova explosion on Earth's biosphere.	10	CO2

**SECTION-C**

Q 10	Analyse the potential risks and benefits of space weather prediction and monitoring for human technology and infrastructure. Critically analyse the current methods and models used for studying magnetic fields in the near-Earth environment.	20	CO3
Q 11	Our Sun is not a homogenous ball of fire. Discuss its structure and describe the different regions inside with their characteristic properties. List the different ways in which it impacts the Earth and the other planets. <b>OR</b> Analyze the evidence for the expanding universe and its implications for the future of the universe. Explain the evolution of the universe from the big bang to the present day.	14 + 6 20	CO4 CO4