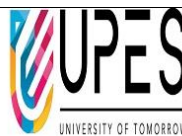


Name:
Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Course: SPACE SCIENCE AND SPACE ENVIRONMENT
Program: B.TECH ASE
Course Code: ASEG4008

Semester: VII
Time 03 hrs
Max. Marks: 100

Instructions: All questions are compulsory

SECTION A

S. No.		Marks	CO
Q 1	What are KBOs in our Solar system?	4	CO1
Q 2	Define Stratopause.	4	CO2
Q 3	What is Heliopause?	4	CO4
Q 4	What are Planetesimals?	4	CO1
Q 5	Define the Solar Wind.	4	CO4

SECTION B

Q 6	Discuss the formation and characteristics of Earth's Magnetosphere.	10	CO4
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	CO2
Q 8	Differentiate between Meteoroids, Meteors and Meteorites. OR Differentiate between Meteoroids, Comets and Asteroids.	10	CO1
Q 9	Given that the entire Solar system formed at nearly the same time, discuss the evolution of the Earth's atmosphere in time.	10	CO2

SECTION-C

Q 10	a. The energetic charged particles, principally from the solar wind, and some due to the cosmic rays get trapped in specific zones in the Earth's higher atmosphere. What are these zones called? b. How many of them exist in the Earth's system? c. Discuss them in detail regarding their formation and their characteristics.	3 + 3 + 14	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. OR Involving the relevant Physics, compare the life cycles of stars that begin their lives as Proto-stars, with masses quite smaller than, nearly equal to, and quite larger than our Sun.	14 + 6 20	CO1 CO1