

M.SC.(Physics) Semester - 2 (CBCS) Examination
May/June-2022 (NEW COURSE)
Space Physics (CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Q.1 Answer the following questions in short. (Any Seven) (Each 2 marks) 14
1. What is Stratosphere? Give two important features of it.
 2. What do you mean by greenhouse effect? Explain in short.
 3. Define Airglow and explain it in brief.
 4. Give your comments on radiative transfer.
 5. What do you mean critical frequency? Explain it in brief.
 6. Discuss about Solar flares in brief.
 7. What do you mean by dispersion and polarization? Explain.
 8. What is Solar Chromosphere? Mention approximate temperature and density of it.
 9. Comment on Solar wind.
 10. List few characterises of a real remote sensing system.
- Q.2 Answer following questions in detail. (Any two) (Each 7 marks) 14
1. List and explain different layers of the Earth's atmosphere.
 2. How does (i) electron temperature, (ii) density and (iii) electronic potential of a plasma measured? Explain it in detail.
 3. What is geopotential height of the atmosphere? Obtain equation for Geopotential height.
- Q.3 Answer the following question as it requires. (each 7 marks) 14
1. Describe about "Earth's Magnetic field" in details.
 2. What are Plasma sphere and Van Allen radiation belts? Explain it in detail.
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- Q.3 Answer the following question as it requires. (each 7 marks)
1. Write down models of neutral atmosphere. Explain at least one of it in details.
 2. What do you mean by remote sensing? Explain detail about theory of remote sensing.
- Q.4 Answer the following question as it requires. (any two question) (each 7 marks) 14
1. Explain chemical composition of the Earth's atmosphere
 2. Explain effect of ionosphere on radio wave propagation in detail.
 3. Describe the structure of the exosphere. Also explain gaseous escape from it.
- Q.5 Answer the following question as it requires. (any two question) (each 7 marks) 14
1. What are sunspot number and Solar cycle? Describe about each in details.
 2. Describe Chapman's theory of photo ionisation and mention about production of different ionosphere layer.
 3. Write a short note on Data acquisition and Interpretations
 4. What do you mean by GPS? Discuss in details how does GPS work.
