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Reg. No. : ....

Name : ....

Sixth Semester B.Sc. Degree Examination, April 2024

First Degree Programme under CBCSS

Physics

Elective Course

PY 1661.2 : SPACE SCIENCE

(2018 Admission Onwards)

Time : 3 Hours   Max. Marks : 80

SECTION – A

Answer **all** questions in **one** or **two** sentences.

1. What is galaxy?

2. Difference between pulsars and quasars.

3. What is Chandrasekhar limit?

4. Define white dwarfs.

5. Why do sun spot look dark?

6. Define solar corona.

7. Why thermosphere is the hottest layer?

8. What is the concept of ionization?

9. How do solar storm starts?

10. What do you mean by magneto tail?

SECTION – B

Answer any **eight** questions.

11. Differentiate the spiral and elliptical galaxies.

12. What is plasma sheet?

13. Give the difference between astronomy and cosmology.

14. What is neutron star? How do they form?

15. How does plasma sphere work?

16. What is photon diffusion time?

17. Enumerate the significance of Hertzprung – Russel diagram.

18. What is supernova explosion?

19. Explain the features of ionosphere.

20. What causes earth's magnetism?

21. How does solar activity affect climate?

22. Explain ionospheric hydrogen and helium.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions.

23. Explain quasi stellar radio sources.

24. Describe the coordinates and catalogues of astronomical objects.

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25. What is black holes? How are they formed?

26. Discuss in detail the stellar evolution.

27. Deduce the equation for internal temperature of a star.

28. How will you explain the temperature profile of earth's atmosphere?

29. What are the general features of sun spot?

30. Explain the structure of magnetosphere.

31. Discuss in detail the earth radiation belts.

<div align="right">(6 × 4 = 24 Marks)</div>

<div align="center">SECTION – D</div>

Answer any **two** questions.

32. What is solar wind? How the solar wind is originated and explain disturbed solar wind?

33. (a) Derive the gravitational potential energy of a star.

    (b) Obtain an expression for the internal pressure of a star.

34. Describe the temperature distribution in the troposphere, temperature of stratosphere and temperature of mesosphere.

35. Briefly discuss Chapman - Ferraro closed magnetosphere and Dungey's open magnetosphere.

<div align="right">(2 × 15 = 30 Marks)</div>

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