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G – 1403

Reg. No. :

Name :

Sixth Semester B.Sc. Degree Examination, April 2019

First Degree Programme under CBCSS

PHYSICS

Elective Course

PY 1661.2 : Space Science

(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

PART – A

Answer **all** questions. **Each** question carries **one** mark.

1. Define the term cosmology.
2. Give the full form for Quasars.
3. Name the outer boundary of the sun's magnetic field.
4. What is sun spot ?
5. What is Zeeman effect ?
6. What are the two bright spots of light on opposite sides of a halo around the sun called ?
7. What is the definition of one Astronomical Unit ?
8. What is the hottest region of the sun ?
9. Name the place of south magnetic pole located.
10. Name the instrument used to measure earth's field.

(10×1=10 Marks)

P.T.O.



PART - B

Answer **eight** questions. **Each** question carries **two** marks.

11. What is Hubble's law ?
12. List various classes of spiral galaxies.
13. List the characteristics of solar corona.
14. Explain the properties of photosphere.
15. Explain the term solar storm.
16. A 5th magnitude star is how many times brighter than an 8th magnitude star ?
17. What is a black hole ?
18. What is White Dwarf ?
19. Explain the term Alfvén speed.
20. Describe the Chandrasekhar limit.
21. What are the four primary layers of atmosphere ?
22. Draw the typical vertical profile of temperature observed in the atmosphere.

(8×2=16 Marks)

PART - C

Answer **six** questions. **Each** question carries **four** marks.

23. Draw the typical rotation curve of a spiral galaxy and comment.
24. Explain a co-ordinate system based on the geometry of the Sun Earth system.
25. Draw the Earth's magnetic field diagram.
26. Discuss the Interplanetary Magnetic Field (IMF) carried by a solar wind.
27. Draw the HR diagram and explain.



28. Derive the equation for apparent magnitude m of a star.

29. Discuss the random walk of photons in star.

30. Discuss the sources of ionosphere electric field.

31. Name the gases available in different layers of atmosphere.

(6×4=24 Marks)

PART – D

Answer **two** questions. **Each** question carries **fifteen** marks.

32. With schematic diagram, explain the milky way.

33. Derive an equation for internal temperature of a star.

34. List the physical data for the sun.

35. Discuss the overall structure of the earth magnetosphere.

(2×15=30 Marks)

St. Xavier's College, Thumba