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Sardar Patel University, Vallabh Vidyanagar – 388120
B.Sc. [Semester- V] NC
Subject Physics Course Code No: US05CPHY06 (NC)
Subject/Course Title : Astronomy and Astrophysics

Date 31-12-2020   Thursday   Time: 2:00 pm to 4:00 pm
                                              Total Marks-70

Q-1   **Multiple Choice Questions: [Attempt all]**   [10]

(1) Mesosphere ranges from _____ to _____ km above sea level.
- a) 1 to 8
- b) 8 to 15
- c) 15 to 25
- d) 50 to 80

(2) Which telescope uses two lenses?
- a) Newtonian Reflector
- b) Cassegrairian
- c) Coude
- d) Galilean

(3) Roche lobes are associated with phenomenon of _____ .
- a) Mass transfer in binaries
- b) Stellar luminosity
- b) Stellar temperature
- c) Stellar magnetic field

(4) The Sun according to H-R diagram falls in category of _____ stars.
- (a) main sequence
- (b) Dwarf
- (c) Cepheid variable
- (d) red giants

(5) Solar magnetic field cycle has approximate period of _____ years.
- a) 10
- b) 11
- c) 22
- d) 55

(6) Flares are believed to have origin in _____ .
- a) Convection
- b) Prominences
- c) Ejection of solar mass
- d) X type neutral point

(7) The Sun revolves around
- a) The earth
- b) The moon
- c) Jupiter
- d) The center of the Galaxy

(8) Which telescope has a hole in primary mirror?
- a) Newtonian Reflector
- b) Cassegrairian
- c) Coude
- d) Galilean

(9) Which part of the milky way galaxy has the highest density?
- (a) Nucleus
- (b) spiral arms
- (c) Halo
- (d) space between spiral arms

(10) Our galaxy has _____ shape
- a) Spiral
- b) Spherical
- c) Elliptical
- d) Irregular

Q.2 Do as directed (fill in the blanks or state true or false) [08]
1) The point opposite to zenith is known as _____ .
2) The motion of a star perpendicular to line of sight is called _____ .
3) Temperature of the photosphere of the Sun is _____ .
4) _____ is the outermost layer of the Sun.
5) Visual binary stars have wider separation between them. (true/false)
6) Spectroscopic binaries show red and blue shift. (true/false)
7) Distance of the Sun from centre of the galaxy is 1000 K Parsec. (true/false)
8) Our galaxy is Sb type galaxy. (true/false)

Q.3 Short Questions (Answer any 10) [20]
1) Define magnifying power of a telescope
2) What is importance of ionosphere?
3) What is difference between bolometric magnitude and radiometric magnitude?
4) Why photospheric faculae are observed near limb only?
5) Differentiate active and eruptive prominences.
6) How does coronograph work?
7) Write down H-D classification system for stars.
8) What is difference between optically double and true binary stars?
9) What is difference between eclipsing and non-eclipsing binaries?
10) Why 21 cm radio waves can give information about core of our Galaxy?
11) What is population I and population II stars?
12) Define Galactic Halo.

Q.4 Long Questions (Answer any four) [32]
1) Discuss stellar parallax method for measurement of stellar distances.
2) Explain difference between slit spectrograph and slit less spectrograph.
3) Discuss Limb darkening.
4) Describe different parts of solar corona.
5) Discuss mass transfer in close binary system.
6) Discuss the theory of the origin of binary star system.
7) Write a note on the structure of our galaxy.
8) Discuss the origin of 21 cm radio waves.

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