[27] SEAT No._____ No. of Printed Pages : 02

Sardar Patel University

B.Sc. Physics Semester V

US05CPHY06 (ASTRONOMY AND ASTROPHYSICS)

12/04/2019, Friday

Date: 12-04-2019 Friday **Time: 10:00 a.m. to 1:00 p.m.** **Total Marks: 70**

Multiple choice Questions. **10**

1). Astronomical object appears to be shifted towards zenith because of
(a) reflection of light (b) refraction of light
(c) dispersion of light (d) interference of light

2) _____ is the topmost layer of earth's atmosphere.
(a) Stratosphere (b) Mesosphere
(b) Ionosphere (c) Exosphere

3) Brightness recording of a star is known as
(a) Photometry (b) Polarimetry
(c) Spectrometry (d) Spectrophotometry

4) Sunspots are observed in _____ layer of Sun.
(a) Photosphere (b) Chromosphere
(c) Core (d) Corona

5) Radius of Sun is _____ Km.
(a) 95,000 km (b) 69,000 km
(b) 695,000 km (c) 956,000 km

6) Lowest temperature of Sun occurs at _____.
(a) Base of Corona (b) base of chromosphere
(c) Core (d) Photosphere

7) Which of the following is not a true binary system?
(a) Optical double (b) Visual binaries
(c) Spectroscopic Binaries (d) Spectrometric binary

8) Which phenomena is not responsible for Mass transfer in contact binaries?
(a) Solar wind (b) Stellar wind
(c) Roche lobe filling (d) Luminosity

9) Distance of the Sun from center of our galaxy is _____ parsec.
(a) 0.10 (b) 10
(b) 100 (d) 1000

10) In galactic halo region _____ stars are not observed.
(a) Population I (b) Population II
(b) Globular cluster (d) Sub dwarfs

(P.T.O)

Explain in brief. (Any Ten) **20**

1) Define magnifying power of a telescope
2) What is importance of ionosphere?
3) How does coronograph work?
4) What are plages and filaments?
5) Draw temperature profile of Sun.
6) Define color index of a star.
7) Capture theory of origin of binary stars.
8) What is accretion disc.
9) Give stellar classification based on luminosity of stars.
10) Draw a diagram to show the position of Sun in our galaxy.
11) Differential rotation of galaxy .
12) State three methods for determination of distance of the Sun from center of galaxy.

Q.3 (a) Describe refracting and reflecting telescopes with diagrams and state their relative advantages. **06**
(b) Discuss slit less spectrograph. **04**

OR

Q.3 (a) Discuss stellar parallax method for measurement of stellar distances. **06**
(b) Explain how absolute magnitude of a star can be obtained. **04**

Q.4 (a) Describe different layers of the Sun with necessary diagrams. **06**
(b) Explain photospheric limb darkening. **04**

OR

Q.4 (a) Discuss different types of prominences. **06**
(b) Write a brief note on Faculae. **04**

Q.5 (a) Explain mass transfer in binary star system. **06**
(b) Discuss theories of origin of binary system.

OR

Q.5 (a) Discuss Henry Draper (Harvard System) of spectral classification of stars. **06**
(b) Explain Morgan Keenan modification in stellar classification. **04**

Q.6 Write a detailed note on General structure of Galaxy. **10**

OR

Q.6 Discuss prediction of density of Galactic arms using radio observations. **10**

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