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SEAT No. \_\_\_\_\_

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**SARDAR PATEL UNIVERSITY**  
**S.Y.B.Sc. Examination, THIRD Semester**  
**Monday, 26<sup>TH</sup> November 2018**  
**Time : 2.00 pm To 4.00 pm**  
**Physics Elective Course Code : US03EPHY02**  
**Course Title : Basic Geophysics**

Total Marks : 70

Q-1 Write answers to the following multiple choice questions in your answer book by [10] selecting the proper option.

- (1) The steady increase of temperature with depth is known as the \_\_\_\_\_ gradient.  
(a) physical (b) chemical (c) electrical (d) geothermal
- (2) Word Geology is derived from the Greek words \_\_\_\_\_ and \_\_\_\_\_.  
(a) Geo-Logy (b) Geos-Logos (c) Geol-Logy (d) Ge-Ulogy
- (3) The oceanic crust is about 6-11 km thick and consists of heavy rocks like  
(a) aluminium (b) Basalt (c) barium (d) cobalt
- (4) The theory describing the motion of lithosphere is called  
(a) plate theory (b) break theory (c) plate technique (d) plate tectonics
- (5) The earth is believed to be formed about \_\_\_\_\_ billion years ago  
(a) 4.5 (b) 4.6 (c) 4.7 (d) 4.8
- (6) A rock fracture across which there has been no movement is called  
(a) fold (b) fault (c) joint (d) fracture
- (7) The stress that acts to lengthen the object is called \_\_\_\_\_.  
(a) tension (b) compression (c) activation (d) sedimentation
- (8) An earthquake of magnitude 'x' results in seismic waves having amplitude \_\_\_\_\_.  
(a)  $10^x$  (b)  $10^{2x}$  (c)  $10^{3x}$  (d)  $10^{4x}$
- (9) The event that takes place when two blocks of the earth suddenly slip past each other is called  
(a) earthquake (b) volcano (c) landslide (d) avalanche
- (10) The strength of seismic shaking at a given location is called the earthquake \_\_\_\_\_.  
(a) frequency (b) velocity (c) intensity (d) energy

Q-2 Answer the following questions in brief. (Answer any Ten Questions)

[20]

- (1) Discuss about the lithosphere in brief.
- (2) Enlist any four branches of Geology.
- (3) Write a short note on Isostasy
- (4) Define sedimentation and denudation.
- (5) Write a short note on continental drift.
- (6) Explain the landscape architecture in short.
- (7) Explain in brief about hydrostatic pressure.
- (8) Define stress and strain.

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- (9) Write a short note on erosion.
- (10) Write a short note on seismic waves.
- (11) Define : foreshocks and aftershocks.
- (12) Write a note on tectonic plates and plate boundaries.

Q-3 Describe the internal structure of Earth and explain about the Core, Mantle and Crust of the Earth. [10]

OR

Q-3 (a) With the help of different arguments explain the Binary Star theory in detail. [5]  
 (b) Discuss about the accretion theory in detail. [5]

Q-4 (a) Write a detailed note on sea-floor spreading. [5]  
 (b) Discuss the Wegner's theory of continental drift in detail. [5]

OR

Q-4 (a) Write a note on types of plate boundaries. [5]  
 (b) Write a note on metamorphic rocks. [5]

Q-5 (a) Write a note on Dip-slip fault and Oblique-slip fault. [5]  
 (b) Define stress and explain it in connection to geology. Also explain the different types of stress. [5]

OR

Q-5 (a) Discuss the concept of strain in relation to geology. Also explain in detail about the various types of strain. [5]  
 (b) Write a detailed note on folds. [5]

Q-6 (a) Write a note on body waves. [5]  
 (b) Give a detailed account of the origin of earthquakes and also explain how the tectonic plates and plate boundaries affect them. [5]

OR

Q-6 (a) Write a note on epicenter. [5]  
 (b) Explain how an earthquake is measured and discuss in detail about the magnitude and intensity of earthquake. [5]

