

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

SUBJECT : GEOLOGY

Name of Paper : Dynamics of the Earth & Structural Geology)

PAPER – XI

VI SEMESTER

A : Choose the correct answers : (25 Marks)

1. The neatest from the Earths surface is
 - i) Guttenberg –Weichert Discontinuity
 - ii) Conrad Discontinuity
 - iii) Mohorovicic Discontinuity
 - iv) Repetti Discontinuity
2. Among the following, the lowest layer is
 - i) Exosphere
 - ii) Troposphere
 - iii) Mesosphere
 - iv) Stratosphere
3. In the Lithosphere, the highest concentration amongst the elements is
 - i) aluminium
 - ii) silicon
 - iii) oxygen
 - iv) iron
4. According to the sedimentation clock, the average rate of deposition in 755 years is
 - i) 30cm
 - ii) 40 cm
 - iii) 1 metre
 - iv) 5 metre
- 5.The fastest seismic waves are the
 - i) P
 - ii) S
 - iii) Rayleigh waves
 - iv) Love waves
- 6.) What is the name of the Mesozoic supercontinent that consisted of all the present continents?
 - (i) Eurasia
 - (ii) Laurasia
 - (iii) Pangaea
 - (iv) Gondwanaland
7. When did the supercontinent Pangaea begin to break apart?
 - (i) about 10,000 years ago
 - (ii) about 10 million years ago
 - (iii) about 200 million years ago
 - (iv) about 570 million years ago
8. The two scientists proposed the theory of seafloor spreading in the early 1960s?
 - (i) Charles Darwin and James Hutton
 - (ii) Harry Hess and Robert Dietz
 - (iii) F. Vine and D. Mathews
 - (iv) None of the above
9. New oceanic lithosphere forms at
 - (i) Divergent plate boundaries
 - (ii) Convergent plate boundaries

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- (iii) Transform plate boundaries (iv) All of the above
10. Which of the following is not a divergent plate boundary?
(i) The Great Rift Valley of East Africa (ii) The East Pacific Rise
(iii) The San Andreas fault (iv) The Mid-Atlantic Ridge
11. What is the term for the general process by which rocks are broken down at the Earth's surface?
i) weathering ii) lithification
iii) erosion iv) deposition
12. Which of the following minerals has a low solubility and therefore is least susceptible to chemical weathering at the Earth's surface?
i) feldspar ii) quartz
iii) calcite iv) olivine
13. Exfoliation domes form from
i) frost wedging ii) hydrolysis
iii) pressure release iv) root wedging
14. The general term for periods of mountain-building that include folding, faulting, magmatism and metamorphism is called
i) convergence ii) rejuvenation
iii) orogeny iv) isostasy
15. Caves are most likely to form in which of the following rock types
i) limestone ii) basalt
iii) granite iv) olivine
16. The point vertically above the focus is
(i) Epicenter (ii) Isocenter
(iii) Epivector (iv) Isovector
17. The seismic waves which are also called transverse waves are
(i) S-waves (ii) P-waves
(iii) Rayleigh waves (iv) Love waves
18. The depth of focus in the shallow earthquakes is
(i) up to 100 km (ii) up to 200 km
(iii) up to 60 km (iv) up to 150 km
19. The magnitude of the quake is based on what aspect of the waves
(i) Frequency (ii) Amplitude
(iii) Time period (iv) Intensity

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20. Earthquakes originating due to volcanic eruptions or landslides are called
- (i) Tectonic earthquakes
 - (ii) Shallow earthquakes
 - (iii) Class-A earthquakes
 - (iv) Non-tectonic earthquakes
21. The algebraic difference between the greatest stress and the least stress at any point is called
- i) Tensile stress
 - ii) Stress difference
 - iii) Shearing stress
 - iv) Compressive stress
22. Cleavage or schistosity that is parallel to the bedding is commonly referred to as
- i) Bedding cleavage
 - ii) Fracture cleavage
 - iii) Shear cleavage
 - iv) Slaty cleavage
23. A linear structures which are developed by the compression of competent beds are called
- i) Boudinage
 - ii) Slickensides
 - iii) Mullion structure
 - iv) Lamination
24. Deformation which involves displacement between individual grains are called
- i) Intergrannular movement
 - ii) Intragranular movement
 - iii) Recrystallization
 - iv) None of the above
25. Which of the following is the result of rock flowage?
- i) Fracture cleavage
 - ii) Bedding cleavage
 - iii) Slip cleavage
 - iv) Slaty cleavage

B : Fill up the blanks : (15 Marks)

1. The shape of the Earth is _____
2. The total volume of the Earth is _____
3. The half-life of U-235 is _____
4. A _____ is an area on Earth where two or more lithospheric plates collide.
5. Indian plate moving towards _____
6. The collision of the Indian plate into the Eurasian plate about 50 million years ago resulted in the erection of the _____
7. The most important erosional agent is _____.
8. The equilibrium or balance between crust and mantle is called _____.
9. An _____ is the primary mechanism by which mountains are built on continents.
10. Rocks behave as _____ masses towards operating stresses.
11. The phase during which the stored elastic energy is released is _____.

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12. The term expressing the qualitative effect of earthquake is _____.
13. A simple method used for determining the orientation of the axis of a cylindrical fold is _____.
14. If the stress exceeds the elastic limit, the deformation is _____.
15. _____ is the property of rocks whereby they break along approximately parallel surfaces.

Key Answers (MCQ) :

- | | | | | |
|----------|----------|-----------|-----------|-----------|
| 1. (ii) | 2. (ii) | 3. (iii) | 4. (i) | 5. (i) |
| 6. (iii) | 7. (iii) | 8. (ii) | 9. (i) | 10. (iii) |
| 11. (i) | 12. (ii) | 13. (iii) | 14. (iii) | 15. (i) |
| 16. (i) | 17. (i) | 18. (iii) | 19. (ii) | 20. (iv) |
| 21. (ii) | 22. (i) | 23. (iii) | 24. (i) | 25. (iv) |

Key answers (Fill up the blanks) :

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|------------------------|-----------------------------|-----------------------|
| 1. Oblate spheroid | 2. 1.08×10^{27} cc | 3. 713 million years |
| 4. Convergent boundary | 5. North | 6. Himalayan mountain |
| 7. water | 8. Isostasy | 9. Orogeny |
| 10. elastic | 11. rupture phase | 12. intensity |
| 13. Beta diagram | 14. Plastic | 15. Foliation |