Question No. 1 is Compulsory. Answer any 9 (nine) questions taking at least 4 (four) questions from Section - A and Section - B.

1. Choose the correct answer using code (a) or (b) or (c) or (d) (10×1=10)

(i) Ozone layer is a part of
   (a) Troposphere  (b) Stratosphere
   (c) Mesosphere   (d) Thermosphere

(ii) A Rock beds lies beneath the Deccan Traps in certain parts of Narmada Valley and Western India is called
    (a) Lameta Beds       (b) Inter-Tappean Beds
    (c) Jabalpur Beds    (d) Nagpur Beds

(iii) The location below the earth’s surface where the earthquake originate is called
     (a) Epicenter        (b) Hypocenter
     (c) Fault plane      (d) Rupture

(iv) An optical phenomenon in which a substance has different colors when observed at different angles is called
     (a) Pleochroism      (b) Extinction Angle
     (c) Birefringence    (d) Dispersion

(v) In geology, a heavy mineral is one with a density that is greater than
    (a) 1.9 g/cm³       (b) 2.9 g/cm³
    (c) 3.1 g/cm³       (d) 3.9 g/cm³

(vi) The mineralogical maturity of the heavy mineral assemblages of the sediments is quantitatively defined by
     (a) QFL index        (b) QAP index
     (c) ZTR index        (d) ZFL index
(vii) In Electrical Methods fresh rock is generally a
   (a) Good conductor  (b) Poor conductor
   (c) No conductor   (d) None of these

(viii) Rocks cannot retain magnetism when the temperature is above
   (a) Freezing point  (b) Neel point
   (c) Principal point (d) Curie point

(ix) World Environment day is
     (a) 22 March  (b) 22 April
     (c) 05 June   (d) 08 June

(x) The Most Abundant Elements In The Earth’s Crust is
    (a) Iron        (b) Oxygen
    (c) Silica     (d) Aluminium

SECTION - A

2. (a) Describe the seismically defined layer of the Earth with neat diagram.  (5)
   (b) Write explanatory notes on any two of the following:—  (2×2.5 =5)
       (i) Isostasy         (ii) Continental drift
       (iii) Causes of volcanoes

3. (a) Describe the advantages & Limitations of aerial photographs.  (5)
   (b) Explain various types of drainage pattern.  (5)

4. (a) Write the classification of faults. Support your answer with neat sketches.  (5)
   (b) Write explanatory notes on any two of the following:—  (2×2.5 =5)
       (i) kink band       (ii) Lineation
       (iii) Box fold

5. (a) Why are marine animals better suited for preservation as fossils than land animals?  (5)
   (b) Discuss the evolutionary trend in Hominidae.  (5)

6. Write notes on any two of the following  (2×5=10)
   (a) Himalayan orogeny     (b) Classification of aquifers
   (c) Landslide causes & prevention

7. (a) Describe the distribution & classification of Precambrian rocks in India.  (5)
   (b) Discuss the effects of climatic condition and igneous activities in shaping the Indian sub-continent.  (5)

8. (a) Write a note on the engineering properties of rocks.  (5)
   (b) Discuss the Geological consideration for the constructions of dams.  (5)
SECTION - B

9. Write short notes on any four of the following:-(4×2.5 =10)
   (i) Characteristics of crystal (ii) Hardness of minerals
   (iii) Oxidation (iv) Crystal face
   (v) Symmetry axes of a cube

10. (a) Explain why basaltic magma and granitic magma behave differently as they rise toward the Earth’s surface. (5)
    (b) How does contact metamorphism differ from regional metamorphism? (5)

11. (a) Write the Classification of clastic and non-clastic rocks. (5)
    (b) Write short notes on any two of the following (2×2.5=5)
        (i) Sandstone classification
        (ii) Current ripples and cross lamination
        (iii) Erosional structures

12. (a) Write notes on the distribution of coal & petroleum in India. (5)
    (b) Write short notes on any two of the following:- (2×2.5=5)
        (i) Gangue & Tenor of ore
        (ii) Metallogenic epochs
        (iii) National Mineral Policy

13. (a) Describe geo-environmental impacts of Urbanization in Mizoram. (5)
    (b) Write short notes on any two of the following:- (2×2.5=5)
        (i) Polymorphism
        (ii) Coordination number
        (iii) Trace Elements

14. Write notes on any two of the following:- (2×5=10)
    (a) Origin and occurrence of aluminium
    (b) Geophysical prospecting
    (c) Ore dressing

15. (a) Discuss the environment protection laws in India. (5)
    (b) Write a note on the types of coastal erosion and their mitigation measures. (5)