

If the questions attempted are in excess of the prescribed number, only the questions attempted first up to the prescribed number shall be valued and the remaining ones ignored.

Answers may be given either in English or in Bengali but all answers must be in one and same language.

ANSWER ANY FIVE QUESTIONS.

1. a) Define a fault. Draw sketches to show the different parts of a fault. What are the different types of faults and state their distinguishing features. 3+5+12  
b) Define a fold. Explain with the help of neat sketches the important types of folds, as distinguished on the basis of interlimb angle. Add note on the causes of folding. 3+9+8
2. a) What do you understand by Landslides ? Give a classification of different types of landslides. State any two remedial measures for prevention of landslides. 5+10+5  
b) What is a seismogram ? Illustrate the procedure of determination of the epicenter of an earthquake from seismogram data ? 5+15
3. a) Write in detail about the interior of the earth and its composition mentioning the major discontinuity surfaces. 20  
b) What is an Unconformity ? How is it recognized ? Describe briefly the different types of Unconformities and their significance. 4+4+12
4. a) Explain Darcy's Law. What is 'Hydraulic Conductivity' of an aquifer ? Show how it is related to 'Transmissivity' of an aquifer. Also show how hydraulic conductivity is related to groundwater velocity. 4+4+6+6  
b) What is Rain Water Harvesting ? Why it is so important now-a-days ? Describe briefly on Roof Top Rain Water Harvesting giving emphasis on its various components and methods. 4+6+10
5. a) What do you understand by the term 'Atmospheric window' ? Discuss briefly on the different types of orbiting satellites and their significances. 5+15  
b) What are the different types of plate boundaries ? Discuss briefly each of them giving emphasis on their tectonic significance. Illustrate your answer with suitable sketches. 6+14

P.T.O.

6. a) Define porosity and permeability of a rock. Distinguish between 'Specific Yield' and 'Specific Retention'. How are they related to porosity of an aquifer ?  
8+8+4
- b) What is a cone of depression and how is it formed ? Explain the result of excessive withdrawal of groundwater by pumping in rural as well as in cities.  
3+5+12
7. a) Discuss the stratigraphic classification of Gondwana supergroup or rocks mentioning lithology, brief content of fossils and broad outline of Palaeoenvironment.  
8+12
- b) Describe briefly on the application of radioactivity in determining the age of rocks. State why methods used in case of Archaean rocks one generally not used in case of Tertiary rocks ?  
14+6
8. a) Define Dam. What are the different types of dam ? Describe the salient geological features that are to be given importance in selecting sites for construction of a dam.  
3+5+12.
- b) What is meant by GPS ? Describe its operational principles.  
5+15
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