

(3) Hours

Total Marks: 80

- N.B.**
1. Question No. 1 is **compulsory**
 2. Attempt any **Three** questions out of remaining **Five** questions.
 3. Draw neat **labelled diagrams** wherever necessary.
 4. All the parts of a question should be **grouped together**.
 5. Figures to the **right** indicate marks

- Q.1a** Write the identifying properties and economic use of the following minerals **5**
- (i) Pyrite
 - (ii) Gypsum
 - (iii) Quartz
 - (iv) Muscovite
 - (v) Diamond
- Q.1b** Explain with labelled diagram **10**
- (i) Perched water table
 - (ii) Dip and strike
 - (iii) Angular unconformity
 - (iv) Seismic waves
 - (v) Dyke
- Q.1c** Answer the following **5**
- (i) Parts Gravity Dam
 - (ii) Hinge of the fold
 - (iii) Solifluction
 - (iv) Fissure Eruption
 - (v) Asthenosphere
- Q.2(a)** Explain theory of plate tectonics with suitable diagram. **10**
- (b) What is weathering? Explain Chemical weathering and its engineering consideration. **6**
 - (c) Give a brief description of layered structure of the earth. **4**
- Q.3(a)** Explain mineralogical and textural classification of igneous rocks **10**
- (b) What are the agent of metamorphism, describe Dynamic metamorphism **5**
 - (d) Explain vesicular and amygdaloidal structures in Igneous rock. **5**
- Q.4(a)** What are Folds? Explain classification of folds on the basis of position of axial Plane. **10**
- (b) What are confined and unconfined aquifer? Explain cone of depression in ground water. **10**

Q.5(a) Describe the geological conditions for site selection of dam and explain how Geological structures create favourable and unfavourable conditions at a dam site? **10**

(b) Define RQD and Core Recovery, Calculate RQD and Core Recovery from the given data and comment on the suitability of rocks for foundation purpose. **10**
Total run 2m.

Sample No.	Length of the core in cms	Nature of the lower end of the core sample	Sample No.	Length of the core in cms	Nature of the lower end of the core sample
a	12	N	i	26	N
b	16	N	j	10	N
c	11	N	k	17	N
d	09	M	l	18	N
e	9	M	m	8	M
f	02	N	n	09	N
g	12	N	o	09	M
h	16	N	p	05	N

Q.6 Write short notes on **any 5** of the following-

5X4=20

- (i)** Types and causes of landslide
- (ii)** Aquifer
- (iii)** Normal fault
- (iv)** Products of volcano
- (v)** Tectonic cause of earthquake
- (vi)** Porphyritic Texture
