

This question paper contains 2 printed pages.]

Your Roll No.

1326

A

B.Sc. (Hons.)/III

GEOLOGY—Paper XI

(Hydrogeology and Engineering Geology)

(Admissions of 2004 and onwards)

Time : 3 Hours

Maximum Marks : 45

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Attempt five questions, necessarily two questions from

Section-A and two questions from Section-B,

Use separate Booklets for Section-A and Section-B

All questions carry equal marks.

SECTION-A

1. Discuss in detail about the surface exploration methods in groundwater. 9
2. Write notes on the following :
 - (a) Steady state radial flow to pumping wells in unconfined aquifers.
 - (b) Groundwater in non-indurated sediments. 9

[P.T.O.]

3. Differentiate between the following :
- (a) Aquifer and Aquitard
 - (b) Specific yield and specific retention
 - (c) Homogeneous and heterogeneous aquifers. 9
4. Write notes on the following :
- (a) Hill-piper diagram (Trilinear Plot) for representing groundwater quality data.
 - (b) Darcy's law and its validity 9

SECTION-B

5. While investigating a proposed gravity dam site, what should a geologist look for? Discuss the causes of failure and preventive measures taken for a gravity dam. 9
6. Tunnel design and tunnelling methods are dependent upon the geology of the area. Explain with suitable sketches. 9
7. Write notes on any *two* of the following :
- (a) Point load Index
 - (b) Reservoir sicing
 - (c) Brazilian Test 9
8. Write notes on any *three* of the following :
- (a) Effective porosity
 - (b) Chute
 - (c) Free board 9