

**PARUL UNIVERSITY**  
**PARUL INSTITUTE OF APPLIED SCIENCES**  
**MID SEMESTER INTERNAL EXAMINATION, MARCH, 2020**  
**M. Sc. Semester IV**  
**Subject: GEOLOGY**

**Paper Code: 11211253**

**Title of the paper: Engineering Geology**

**Date: 04/03/2020**

**Time: 12:00 PM – 01:30 PM**

**Maximum Marks: 40**

**Instructions:**

- 1. All questions are compulsory and options are given in first and second question only.**
- 2. Numbers to the right of question indicate the marks of respective question.**

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- Q. 1** Attempt **any one question** of the following. **(08)**  
(i) Explain coarse soils in detail.  
(ii) Short note on Mechanical weathering.
- Q. 2** Attempt **any three questions** of the following. **(12)**  
(i) Short note on tropical soils.  
(ii) Short note on Mass characteristics of soil.  
(iii) Draw stress-strain curve for dense and loose sand.  
(iv) Explain tunneling in soft ground.  
(v) Short note on investigation of reservoir sites.
- Q. 3** Do as directed. Attempt **all five questions**. **(05)**  
(i) Define density of coarse grained soil.  
(ii) Define Swelling ground.  
(iii) Define Squeezing ground.  
(iv) Define Arch dam.  
(v) What is dispersive soil?
- Q. 4** Write correct option in your answer sheet for following 15 multiple **(15)**  
choice questions.
- MCQ 1 Specific gravity of gravels is \_\_\_\_\_.  
(A) 2.0 – 2.4 (B) 1.5 – 1.8  
(C) 2.5 – 2.8 (D) 1.0 – 1.4
- MCQ 2 Bulk density( $\text{Mg m}^{-3}$ ) of gravel is \_\_\_\_\_.  
(A) 3.45 – 4.3 (B) 1.45 – 2.3  
(C) 0.45 – 1.3 (D) 2.45 – 4.3
- MCQ 3 The angle of shearing resistance is influenced by the \_\_\_\_\_ distribution and \_\_\_\_\_.  
(A) Grain roundness and size (B) Soil particle and size  
(C) Grain size and grain shape (D) None of the above
- MCQ 4 \_\_\_\_\_ has sufficient shearing and tensile strength to allow the tunnel heading to be advanced without support, typical representatives being stiff clays with low plasticity and loess above the water table.  
(A) Running ground (B) Flowing ground  
(C) Firm ground (D) Ravelling ground

- MCQ 5 \_\_\_\_\_ types of ground moves like a viscous liquid.  
 (A) Running ground (B) Flowing ground  
 (C) Firm ground (D) Ravelling ground
- MCQ 6 Two basic mechanisms that contribute towards the deformation of coarse soil are  
 (A) distortion of the particles and the relative motion (B) distortion of particles and gravity  
 (C) distortion of the particles and the parent composition (D) None of the above
- MCQ 7 A \_\_\_\_\_ dam is a rigid monolithic structure that is usually straight in plan.  
 (A) Gravity (B) Buttress  
 (C) Arch (D) None of the above
- MCQ 8 Hoover dam, Colorado is an example of \_\_\_\_\_ type of dam.  
 (A) Gravity (B) Buttress  
 (C) Arch (D) None of the above
- MCQ 9 Errochty Dam, Scotland is an example of \_\_\_\_\_ type of dam.  
 (A) Gravity (B) Buttress  
 (C) Arch (D) None of the above
- MCQ 10 Broad valley that has strong rocks on one side and weaker ones on the other possibly can be spanned by a combined gravity and embankment dam which is called \_\_\_\_\_.  
 (A) Arch dam (B) Composite dam  
 (C) Buttress dam (D) All of the above
- MCQ 11 Cow Green Dam in Teesdale, northeast England is an example of \_\_\_\_\_ type of dam.  
 (A) Arch dam (B) Composite dam  
 (C) Buttress dam (D) All of the above
- MCQ 12 Match the following:  
 TO 15
- | Types of material | Size(in mm)         |
|-------------------|---------------------|
| (A)Boulders       | (I) 0.06 – 0.2      |
| (B)Coarse gravel  | (II) Over 200       |
| (C)Fine sand      | (III) 0.002 – 0.006 |
| (D)Fine silt      | (IV) 20 – 60        |

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