Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Summer 2018 - 19 Examination

Semester: 7 **Date: 15/05/2019**

Subject Code: 03104432 **Time: 10:30am To 01:00pm**

Subject Name: Field Application of Geotechnical Engineering **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 **Objective Type Questions** - (Fill in the blanks, one word answer, (All are compulsory) (Each of one mark) **(15)**

1. _____ is a type of Sedimentary rock.
   (a) Basalt (b) Gneiss
   (c) Granite (d) Sandstone
2. Which method is known as gravity method?
   (a)Vacuum dewatering (b) Open Sumps
   (c) Electro-osmosis (d) none of the above
3. Asphalt with water is a type of _____ grouting.
   (a) Emulsion (b) suspension
   (c) solution (d) all of these
4. % of permissible increase in allowable pressure for Raft foundation on medium soil is _____.
   (a) 10% (b) 25%
   (c) 50% (d) 100%
5. Spun pile can be used upto longer length of _____ m.
   (a) 8 (b) 15
   (c) 12 (d) 20
6. _____ Geosynthetics can be classified as uniaxial and biaxial type.
   (a) geogrid (b) geofoam
   (c) geomembrane (d) geotextile
7. Enlist two applications of spun pile.
8. what is groutability ratio?
9. Define Geosynthetics.
10. what is the purpose of dewatering?
11. define: i) joint ii) fracture iii) incompetent rock iv) rock mechanics v) chunk

Q.2 **Answer the following questions. (Attempt any three)** **(15)**

A) what is Spun pile? Describe various characteristics of spun pile

B) Describe mechanical properties of Geosynthetics in brief.

C) A core recovery was 70%, if RQD was 67 %, how much core length is disregard less. If 10% core length is further disregarded because of clay fault, how much RQD is modified. Classify the rock in both cases. (Core Run = 200 cm)

D) Explain permeation grouting, compaction grouting and hydrofracturing with neat sketches.

Q.3 A) Discuss Geological classification of rock. **(07)**

B) State the differences between particulate grout and fine grout. **(08)**

OR

B) Enlist all the functions of Geosynthetics and explain each in detail. **(08)**

Q.4 A) What will be percentage increase in allowable bearing pressure for various types of soils and foundations according to IS-1893. **(07)**

OR

A) What do u mean by NDT testing? Describe pile integrity test in brief. **(07)**

B) Describe following dewatering methods in brief: **(08)**

1. Pump and sump
2. Well point system