

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular), Nov 2017
B. Tech in Civil Engineering, Semester III

Roll No.....

CE304: Engineering Geology & Construction materials

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
 2. Assume suitable data wherever required and mention it clearly.
 3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
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Q.1A Objective type multiple choice questions (10 questions @ 1 mark)

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- i. Which of the following is not one of the channel pattern?
(A) Braided, (B) Narrow, (C) Meandering, (D) Straight
- ii. The San Andreas Fault in California is a part of the boundary between the
(a) Cocos plate and the Nazca plate (b) Pacific plate and the Cocos plate
(c) North American plate and the South American plate
(d) Pacific plate and the North American plate
- iii. If two plates carrying continental crust share a convergent boundary, a likely result is that (a) a divergent plate boundary will form (b) the continents will eventually become welded together (c) one continent will subduct under the other
(d) earthquake activity will stop in the region
- iv. How earth's center is rich in rock with high density
(A) Fe and Ni are very lighter and segregated in the center
(B) Fe and Ni are very heavy and segregated in the center
(C) Si+ Mg+Al are very lighter and segregated in the center
(D) Si+ Mg+Al are very heavier and segregated in the center
- v. Age of the Earth (A) 4.6 mya (B) 4.6 bya (C) 10 mya (D) 10 bya
- vi. The Geosphere is composed of
(A) Earth's core, mantle, crust, continents, oxygen, nitrogen, water vapor, ozone,
(B) Earth's core, mantle, crust, continents, ocean, lakes, river, rain, snow
(C) Earth's core, mantle, crust, continents, ocean floors, rocks, sand, dust
(D) None of the above
- vii. The Mid-Atlantic ridge is an example of
(A) Continent-continent convergence (B) Deep focus earthquake region
(C) Divergent plate boundary (D) Conservative plate boundary
- viii. Discontinuity between continental crust and oceanic crust is
(A) Moho discontinuity (B) Gutenberg discontinuity (C) Conrad discontinuity
(D) None of these
- ix. The Peru-Chile Trench marks the boundary between the (A) Pacific Plate and the Antarctic Plate (B) Nazca Plate and the South American Plate (C) North American Plate and the Cocos Plate (D) Caribbean Plate and the Scotia Plate

- x. Compared to the thickness and density of the continental crust of South America, the oceanic crust of the Pacific floor is
(A) thinner and less dense (B) thinner and more dense
(C) thicker and less dense (D) thicker and more dense
- Q.2 Short answer type questions (4 questions @ 2.5 marks) 10
- Define aggregate abrasion value
 - Define apparent and absolute specific gravity of aggregate
 - Explain the types of gradation of an aggregate
 - What is mortar? What is grout? How are they different?
- Q.3A What do you mean by roof? What are they generally made off? Show the various terminologies with a neat sketch. 05
- Q.3B What is a foundation? How are they classified? How are they chosen? 05
- Q.4A What do you mean by deep foundation? How are they classified? 05
- Q.4B What is a stone? Explain the types of stone based on structure, shape and chemical composition. 05
- Q.5A Explain the moisture condition of aggregates. Define absorption capacity and surface moisture. 05
- Q.5B What are the three types of clays used in brick making? What are the processes involved in brick forming? 05
- Q.6A Explain in detail about the plate tectonic theory. 10
- OR
- Q.6A How are stream networks quantified? Which scheme is commonly used? Explain about the determination of bifurcation ratio with an example. 10
- Q.7A Explain the different types of floor in detail. 10
- Q.7B Explain aggregate flakiness index and aggregate elongation index. How are they determined? 10
- OR
- Q.7B Define pointing, plastering and explain different types of masonry brick bond in detail. 10
- Q.8A What do you mean by door? What is its function? What are the various materials with which doors are made off? Mention the general size of doors and explain how should they be located? 10
- Q.8B What do you mean by scaffolding? What are its types and requirements? 10
- OR
- Q.8B What is a window? What are its types? Explain each one of them briefly. 10