

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

EndTerm Examination (Special), Jan.-Feb.2016

B. Tech in Civil Engineering, Semester III

Roll No.....

CE304: ENGINEERING GEOLOGY

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) 10

- i. Hardness of Minerals defined by a Scale known as:
 - (a) Mohs' scale
 - (b) Richter's Scale
 - (c) Geological Scale
 - (d) None of these
- ii. Gold is :
 - (a) Highly valuable mineral
 - (b) Rare mineral
 - (c) Common and important mineral
 - (d) none of these
- iii. Overturned folds are :
 - (a) convex downwards
 - (b) convex upwards
 - (c) Both limbs essentially dip in same general direction
 - (d) Dip unequally on either side of Axial plane
- iv. Typical character associated with metamorphic rocks are:
 - (a) Plastic Deformation
 - (b) Recrystallization of mineral constituents
 - (c) Development of features like cleavage, foliation, etc.
 - (d) b and c are correct
 - (e) All are correct
- v. In stratified rocks the "Strike joints" are the joints in which :
 - (a) the joint sets strike parallel to the dip direction of the rocks
 - (b) the joint sets where the strike of joints is at any angle between the dip and the strike of the layer
 - (c) the joint sets strike parallel to the strike of the rocks
 - (d) none of above
- vi. The most dominant component of Earth Crust is :
 - (a) Alumina
 - (b) Iron Oxide
 - (c) Silica
 - (d) Lime

- vii. The name of feature produced by river in the region composed of alternating beds of soft and hard rocks is known as:
- Pedestal Rock
 - Stream Terraces
 - Oasis/Slack
 - Escarpment
- viii. The hydraulic Conductivity in Aquifers expressed as:
- meters/Day
 - meters/second
 - Both
 - none
- ix. The water derived from precipitation (rain and snow) is :
- Juvenile water
 - Connate water
 - Meteoric water
 - none of above
- x. Wind-blown Deposits of silt and clay grade particles are known as:
- Crescentic dunes
 - Yardangs
 - Loess
 - Scree Deposits
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- Q.2 Short answer type questions (4 questions @ 2.5 marks) 10
- Define the following terms:
 - Scree deposit and Talus slope
 - Eluvium and Deluvium
 - Write a brief note on the following:
 - Dunes
 - Potholes
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- Q.3A Describe any two "optical properties" of minerals in detail. 05
- Q.3B Explain the property of minerals in detail that describes the behavior of mineral under deformation? 05
- Q.4A Explain the dominant process of chemical weathering for the following types of rocks:
- Iron containing rocks
 - Silicate bearing rocks
- Q.4B Explain at least three principal processes due to which joints may be caused in different rocks. 05
- Q.5A Broadly classify the rocks that have formed from an originally hot molten material through the process of cooling and crystallization. 05
- Q.5B Explain the modes of formation of minerals in nature. 05

- Q.6A If you call a substance mineral than what are the basic properties that should be associated with it? 05
- Q.6B Write the some peculiar phenomenon associated with color of minerals. 05
- OR
- Q.6B Write the Scope of Engineering Geology in planning of an engineering project. 05
- Q.7A How winds are born? Explain at least three methods by which wind performs the work of erosion. 05
- Q.7B What are the Aeolian deposits? Explain in detail with example. 05
- OR
- Q.7B Write brief note on the following : 05
- (a) Mural Joints
- (b) Sheet Joints
- Q.8A Explain the important terms related to the various aspects of movement of water in rock mass that may be composed of gravels, limestones or sandstones. 10
- Q.9A Describe the various methods of river erosion. 10
- Q.9B Define chemical weathering. Describe the main processes of chemical weathering in detail. 10
- OR
- Q.9B Describe the structural features of rocks that are responsible for failure in earth crust. 10