

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular), Nov.-Dec.2015

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. Which one of the following is completely impermeable rock?
 - (a) Jointed crystalline rocks
 - (b) limestones
 - (c) Pebbles
 - (d) Clay
- ii. Arenites Rocks made up of :
 - (a) sediments of coarse grain size
 - (b) sediments of finest grain size
 - (c) sediments of sand grade grain size
 - (d) None of these
- iii. A rock body which may be porous enough to hold enough quantity of water but which by virtue of its other properties does not allow easy and quick flow through it, is called an :
 - (a) Aquiclude
 - (b) Aquifuge
 - (c) Aquifer
 - (d) None of above
- iv. The type of rocks formed by recrystallization of constituent minerals are
 - (a) Volcanic rocks
 - (b) Plutonic rocks
 - (c) Sedimentary rocks
 - (d) Metamorphic rocks
- v. The water derived from precipitation (rain and snow) is :
 - (a) Juvenile water
 - (b) Connate water
 - (c) Meteoric water
 - (d) none of above
- vi. "Disconformity" a kind of structural disturbance in rocks may be identified by one of the following feature:
 - (a) Different inclination
 - (b) No angular variation

	(c) Both of above (d) None of these	
vii.	The intensity of wind erosion depends on which of the following factors : (a) Nature of the region (b) Velocity of wind i.e. Direction and magnitude of wind (c) Duration of exposure (c) All of these	
viii.	Gold is : (a) Highly valuable mineral (b) Rare mineral (c) Common and important mineral (d) none of these	
ix.	Overtured 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	
x.	The hydraulic Conductivity in Aquifers expressed as: (a) meters/Day (b) meters/second (c) Both (d) none	
Q.2	Short answer type questions (4 questions @ 2.5 marks)	10
	i. Explain the following w.r.t. water bearing qualities of rocks : (a) Aquiclude (b) Aquifuge	
	ii. Write the short note on each of the following properties of minerals related to double refraction : a. Birefringence b. Isotropic substances	
Q.3A	Explain the structural feature of rocks that is developed due to change in the process of deposition of sedimentary rocks or normal process of deposition was interrupted in the geological time.	05
Q.3B	Identify the feature in rocks that is observed as divisional planes or fractures along which there is no relative displacement and also classify them on the basis of spatial relationship.	05
Q.4A	"It is true that water from none of sources can be naturally suitable and as economical as the ground water ". Justify the statement.	05
Q.4B	Classify and explain the different zones of sub-surface water.	05
Q.5A	Define the Soil Profile and explain about the different weathering zone below the surface up to which effect of weathering can be easily established.	05

Q.5B	Write short note on the following : (a) Yardangs (b) Pedestal Rocks	05
Q.6A	Explain the difference between the following : (a) Plutonic Rocks & (b) Hypobasal Rocks	05
Q.6B	How the minerals are formed in nature? Explain the mode of formation of minerals.	05
OR		
Q.6B	Write a short on "Schistosity" w.r.t. rocks.	05
Q.7A	Classify and explain the joints in Stratified rocks based on the Geometry of rock.	05
Q.7B	Write brief note on the following : (a) Mural Joints (b) Sheet Joints	05
OR		
Q.7B	"The temperature variation is one of the major factor that brings about the mechanical or physical changes in rock under specific conditions". Justify the statement.	05
Q.8A	Describe the main processes of Chemical Weathering in detail.	10
Q.9A	Explain the following features developed as a result of geological work of water: (a) Gorges & Canyons (b) Escarpments	10
Q.9B	How you can identify the minerals on the basis of their physical makeup or crystal habits?	10
OR		
Q.9B	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