

Reg. No. :

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Question Paper Code: 53012

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Civil Engineering

15UCE302 - ENGINEERING GEOLOGY AND CONSTRUCTION MATERIALS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Granite is an example of
 - aqueous rock
 - sedimentary rock
 - metamorphic rock
 - igneous rock
- Which mineral group abundantly found in earth's crust?
 - Mica group
 - Felspar group
 - Oxide group
 - Silicate group
- Gentle folds have fold angle between
 - 10° to 90°
 - 90° to 170°
 - 170° to 180°
 - 200° to 250°
- Fractures along which there has been no relative displacement is called
 - Fault
 - Joints
 - Folds
 - Intrusions
- A first class brick should have a minimum crushing strength of
 - 7 MN/m^2
 - 10.5 MN/m^2
 - 12.5 MN/m^2
 - 14 MN/m^2
- The good clay for making bricks is
 - unweathered clay
 - weathered clay
 - silted soil
 - black cotton soil

7. The rate of hydration and hydrolysis of cement depends upon its
(a) soundness (b) fineness (c) setting time (d) tensile strength
8. The soundness of cement is tested by
(a) air permeability method (b) Vicat's apparatus
(c) Le-chatelier method (d) all of these
9. The purpose of seasoning of timber is to
(a) change the directions of grains (b) remove voids
(c) reduce moisture content (d) all of these
10. Stainless steel is so called because of its
(a) high strength (b) high corrosion resistance
(c) high ductility (d) brittleness

PART - B (5 x 2 = 10 Marks)

11. What are the physical properties of minerals?
12. What is fold? Name the parts of fold.
13. What are the characteristics of good building stone?
14. What is meant by hydration?
15. Enumerate various market forms of steel.

PART - C (5 x 16 = 80 Marks)

16. (a) Write a critical essay on weathering of igneous rock and its significance in engineering construction. (16)

Or

- (b) Describe the different types of rocks. Give the classification, texture and structures of sedimentary rocks. (16)
17. (a) Classify folds and faults in rocks and explain how they influence the design of dams. (16)

Or

- (b) What are the geological factors to be considered in the road and bridge construction? Explain it. (16)

18. (a) (i) Explain various tests on bricks to find its suitability in construction. (8)
(ii) Briefly explain classification of bricks. (8)
- Or
- (b) (i) Explain criteria for selection of stones. (10)
(ii) List out the advantages of hollow concrete block. (6)
19. (a) Briefly discuss the properties of fresh and hardened concrete. (16)
- Or
- (b) Write short note on:
(i) high strength concrete (4)
(ii) high performance concrete (4)
(iii) self compaction concrete (8)
20. (a) (i) Describe the preservatives which are commonly used in the process of preservation of timber. (12)
(ii) List out the different types of preventives for timber. (4)
- Or
- (b) (i) Describe the various processes adopted to manufacture steel. (10)
(ii) Mention the uses of different types of steel. (6)
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