

Code No: R21012

R10

SET - 1

II B. Tech I Semester, Supplementary Examinations, May – 2013
CONSTRUCTION MATERIALS AND MANAGEMENT
(Civil Engineering)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks

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1. a) Mention the structural requirements and characteristics of a good building stone.
b) What are the different stages of the manufacture of brick? Explain in detail the burning of brick in Bull's Trench kiln? (5M+10M)
 2. a) Draw the neat sketch of structure of wood?
b) Discuss in detail about the common defects in timber? (5M+10M)
 3. a) What is the difference between a fat lime and hydraulic lime? Compare the properties of the two types of limes.
b) Describe the manufacturing process of cement with the help of a flow diagram? (6M+9M)
 4. a) With the help of neat sketch show the various parts of a stone arch?
b) Define scaffolding? Explain the different types of scaffolding which are employed in the building construction? (5M+10M)
 5. a) What do you understand by bulking of sand?
b) What are the various tests conducted on Bitumen? Explain. (5M+10M)
 6. What are the advantages and disadvantages of using geo-grids for soil reinforcement in comparison to steel strips for reinforced earth walls with respect to strength, elongation ease in transportation, laying and chemical resistance? (15M)
 7. a) How does CPM network facilitate the work of construction management of a project?
b) Draw the network and number the events for the following situations.
 - i) A and B can be carried out at the same time.
 - ii) C follows D.
 - iii) F depends on E and D.
 - iv) Neither I nor K can be started before B is completed but they can be concurrently performed.
 - v) C and E follow A.
 - vi) E must be carried out before G.
 - vii) J depends on the completion of I and K.
 - viii) C and E can be executed at the same time.
 - ix) H can be started when J, F and G are completed.
 - x) H is the last activity.(5M+10M)
 8. Write short notes on the following:
 - i) Characteristics of good tile.
 - ii) Resources leveling and Resource allocation.
 - iii) Water proofing.(15M)

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SET - 2

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Time: 3 hours

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Answer any **FIVE** Questions
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1. a) Enumerate the qualities of a good brick? What are the harmful ingredients present in a brick earth?
b) With the help of neat figures explain some important types of roofing tiles? (5M+10M)
2. a) List out the various properties of plastics and various methods of moulding plastics?
b) Explain in detail English bond with the help of neat sketches? (5M+10M)
3. a) What do you understand by slaking of lime? What chemical reactions take place during the process of setting and slaking of lime?
b) What are the standard specifications of OPC. Explain the various laboratory tests performed on cement? (6M+9M)
4. a) Define the following terms:
i) Head Room ii) pitch iii) DPC
b) Explain in detail various classification of arches? (3M+12M)
5. a) What are the characteristics and classification of fine aggregates?
b) What are the design requirements of Bituminous concrete? List the steps involved in Marshall's method of mix design of Bituminous concrete? (6M+9M)
6. a) List down the factors which affect the selection of a construction equipment?
b) Explain different types of geo-synthetics. Also discuss its various properties? (5M+10M)
7. a) Explain three time estimates with reference to PERT.
b) For the following CPM network.
i) Calculate all activity times and all floats in a tabular form.
ii) Find critical path and project duration. (5M+10M)
8. Write short on
i) Stone quarrying
ii) Bond and strength of aggregates
iii) Pointing (15M)

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SET - 3

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CONSTRUCTION MATERIALS AND MANAGEMENT

(Civil Engineering)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks

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1. a) List out the characteristics of a good tile?
b) What is meant by quarry and quarrying? What are the different methods of quarrying? (5M+10M)
 2. a) Draw the cross section of tree and name its various parts?
b) Discuss the various classification of stone masonry? (5M+10M)
 3. a) Define hydration? What are the various field tests conducted for cement?
b) Define workability? Explain the different methods for measuring workability of concrete? (5M+10M)
 4. a) What are the various requirements of good flooring?
b) With the help of neat sketch explain the King Post Truss and Queen Post truss? (5M+10M)
 5. a) What is Gap graded aggregates? In which way they are different from normal graded aggregates?
b) List out the various tests conducted on coarse aggregate and describe any two of them in detail? (5M+10M)
 6. a) What cost components you will consider in deciding the cost of owning and operating of construction equipment?
b) With the help of neat diagram explain the various functions of Geosynthetics? (6M+9M)
 7. a) Define Independent float. Show that it can be determined by subtracting the tail event from Free float.
b) For the following CPM network: (5M+10M)
 - i) Calculate EST, EFT, LST, LFT and all floats of each activity in a tabular form.
 - ii) Find critical path and project duration.
 8. Write short on :
 - a) Methods of manufacture of lime.
 - b) Plastering the new surface and old concrete surface.
 - c) Classification of various types of woods used in buildings. (15M)

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SET - 4

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Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks

1. a) What are the various precautions to be taken during blasting in Quarries?
b) Write a note on various types of glasses which are generally manufactured? (8M+7M)
2. a) Compare merits and demerits of brick masonry and stone masonry?
b) Explain in detail the various methods of seasoning timber? (5M+10M)
3. a) What are the various factors which affect the workability of concrete?
b) Explain the process of manufacturing hydraulic lime? (5M+10M)
4. a) What are the constituents of paints? Mention the important characteristics?
b) List out the various types of flooring? Explain the construction process of the following floors i) Cement concrete flooring. ii) Mosaic flooring. (5M+10M)
5. a) Define bulking of sand and fineness modulus?
b) Discuss the various properties of aggregates? In which way they influence the properties of concrete. (5M+10M)
6. a) List out the various equipments used and their necessity in the construction industries?
b) Discuss in detail the various tests conducted on geotextiles? (5M+10M)
7. a) Define the various floats and show how they are useful in a CPM network?
b) A project consists of 8 activities, draw the network and number the events. (5M+10M)
 - i) Activities A, B and E can start concurrently.
 - ii) Activities C and D are concurrent and depend on the completion of both A and B.
 - iii) Activities F and G are concurrent and depends on the completion of both A and B.
 - iv) Activity H depends on completion of D, E and F.
 - v) The project is complete when G and H are done.
8. Write short on : (15M)
 - a) Damp Proofing
 - b) lean-to-roof.
 - c) High way materials.