

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0022

Roll No.

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B.Tech.

(SEM. III) ODD SEMESTER THEORY
EXAMINATION 2013-14

BUILDING MATERIALS AND CONSTRUCTION

Time : 3 Hours

Total Marks : 100

Note :- Attempt **all** the questions. All questions carry equal marks.

1. Attempt any **four** parts :

(5×4=20)

- (a) What are the factors influencing the choice of a building material ?
- (b) Enumerate the chief characteristics of clay as material used for manufacture of bricks.
- (c) Write the efflorescence in bricks and how will you classify the presence of efflorescence in bricks ?
- (d) Briefly describe the tensile strength test and the water absorption test of stones.
- (e) What are dry and wet rots ? How are they caused and prevented ?
- (f) What is plywood and where is it used with advantage ? State its uses in modern buildings.

2. Attempt any **four** parts : (5×4=20)
- (a) What are the effects of different types of impurities in iron on its physical and mechanical properties ?
 - (b) Describe the properties and uses of any two non-ferrous metals. Describe also their alloys and uses.
 - (c) What are the constituents of glass ? Give the functions of each of them.
 - (d) How are plastics classified ? State the role of plastic as a building material.
 - (e) What is distemping and how is it done ?
 - (f) Briefly describe the properties and uses of sound insulating material.

3. Attempt any **two** parts : (10×2=20)
- (a) State briefly the requirements of a good stair case. Also write the type of various steps with their neat sketches. How are the treads and risers proportioned ?
 - (b) What are its advantages of a cavity wall ? Explain general features of a cavity wall with the help of neat sketches.
 - (c) Write the sources of dampness in a building. What are the techniques and methods of damp prevention ?

4. Attempt any **two** parts : (10×2=20)
- (a) With the help of neat sketches, briefly discuss the classification of windows according to the operational point of view.

(b) What are the functional requirements for the design and construction of roofs ? Briefly discuss with the neat sketches :

(i) *King post truss*

(ii) *Queen post truss.*

(c) Classify various types of lintels and discuss their relative use.

5. Attempt any two parts : (10×2=20)

(a) What are the properties of distempers ? Briefly discuss the process of distempering. Also write the differences between pointing and distempering.

(b) Write about the functional requirements of a ventilation system. Which are the two effects take place for the rate of natural ventilation or acration ? Write also the general consideration and rules for natural ventilation.

(c) Give all the design considerations, which affect the elevator or lift system. Also write the design parameters and the location of elevators.