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III SEMESTER

B.TECH

CE 201 CIVIL ENGINEERING BASICS AND APPLICATIONS

TIME: 3.00 HOURS MAX. MARKS: 40

NOTE: ALL QUESTIONS ARE COMPULSORY

ALL QUESTIONS CARRY EQUAL MARKS

ASSUME SUITABLE MISSING DATA, IF ANY

1. Attempt any **two** parts.

a. Discuss the significance of following properties of lime-

- Slaking of lime
- Hardening of lime (4) CO-1

b. With a neat sketch explain types of defects found in timber. Describe the classification and uses of plywood. (4) CO-1

c. What are the factors controlling composition and quality of steel. Differentiate between mild steel and HYSD bars. (4) CO-1

2. Attempt any **two** parts.

a. What are the essential requirements of a good foundation? With a neat sketch explain types of foundations. (4) CO-2

b. Explain the following terms used for masonry-

King closer, Queen closer, Beveled bat, Corbel, Cornice, Coping, Gable and Parapet (4) CO-2

c. Differentiate English bond with Flemish bond with their essential features. (4) CO-2

3. Attempt any **two** parts

a. Define gel space ratio. Estimate the gel space ratio and theoretical strength of concrete made with 500 gm of cement with water cement ratio 0.52 on complete hydration of cement. (4) CO-3

b. With the help of flow diagram explain the dry process of manufacturing of cement. (4) CO-3

c. Explain specific gravity and soundness tests on cement. (4) CO-3

4. Attempt any **two** parts.

a. What are the steps involved in the mix design of concrete as per IS code. (4) CO-4

b. How the optimal dose of super plasticizer is decides. Explain the effect of it on the strength and durability of concrete. (4) CO-4

c. What are the factors affecting workability of concrete. (4) CO-4

5. Attempt any **two** parts.

a. Enumerate the chief characteristics of rocks used as building stones. Describe the various weathering agencies responsible for deterioration of rocks. (4) CO-5

b. Discuss the following properties of minerals with a suitable example-

- Hardness
- Cleavage
- Fracture
- Specific gravity (4) CO-5

c. What are the different groups of rock forming minerals? With neat sketch explain any two minerals in details. (4) CO-5