

13-1-09

B.E. (Civil) Part - II 3rd Semester Examination, 2009

Subject: Engineering Materials, Construction and Services

Paper/Code No. (CE-302)

(i) Use separate answer script for each half

Branch: Civil Engineering

(ii) Assume data reasonable if not supplied

Full Marks: 70

Time : 3 hours

FIRST HALF

(Answer Q.No.1 and any Two from the rest)

Q.1. Write short notes on any FIVE

- (a) Star shakes; (b) Hypabyssal rock; (c) Natural bed in rocks;
(d) Bogues' compound; (e) OPC; (f) Uses of different types of brick; (g) Knots;
(h) Residual soil; (i) Poor lime.

5 × 3 = 15

Q.2. Differentiate between

- (i) Lime concrete and Cement concrete;
(ii) Calcareous rock and Argillaceous rock;
(iii) Silt and Clay;
(iv) Fly ash and Bottom ash;
(v) Ordinary clay bricks and Fire bricks

5 × 2 = 10

Q.3. (a) What are the functions of cement, water, lime and sand in mortar?

- (b) Classify hydraulic lime and mention their uses.
(c) State any four uses of stones.

4 + 4 + 2 = 10

Q.4. (a) Discuss the method of preserving timbers.

- (b) What are the dry and wet rots ? How they are caused and prevented?
(c) Enumerate the different composition of paint.

3 + 5 + 2 = 10

SECOND HALF

(Answer Q.No.5 and any Two from the rest)

Q.5. Write short notes on any FIVE

- (a) Queen closer; (b) Damp proofing materials; (c) Ashlar's stone masonry;
(d) Pointing; (e) Gas / Foam based fire fighting system; (f) Buffer in a lift;
(g) Friction pile; (h) Requirement of good plaster; (i) Functional requirements of ventilation system.

5 × 3 = 15

Q.6. Differentiate between:

- (a) Single and Double Flemish bond;
(b) Masonry structure and RC framed structure;
(c) Random and Square Rubble stone masonry;
(d) Strap footing and strip footing;
(e) Horizontal and vertical pipe in water supply system;

5 × 2 = 10

Q.7. (a) Briefly describe damp prevention technologies for walls?

- (b) Calculate the cost of installation of water supply system including distribution network in a housing project to be done on a 5 acres of land on the basis of the following data:
FAR = 2.5; Type of housing = 40% HIG, 40% MIG, 20% LIG; SBUA factor = 20%; Transmission Loss 30%; Cost of installation of one million gallon per day water supply system is Rs 70000000/-. Assume all other required data.

3 + 7 = 10

Q.8. (a) What is foundation? Write down the classification of deep foundation.

- (b) Draw plan of a corner joint of a 375 mm thick brick wall, using English bond.

6 + 4 = 10