

Instructions:-

- (i) The marks are indicated in the right-hand margin.
- (ii) There are NINE questions in this paper.
- (iii) Attempt FIVE questions in all.
- (iv) Question No. 1 is compulsory.

Q.1 Choose the correct answer of the following (Any seven question only): [2 x 7 = 14]

- (a) Ultimate strength of cement is influenced mostly by
 - (i) C₃S
 - (ii) C₂S
 - (iii) C₃A
 - (iv) C₄AF
- (b) Granite is a form of
 - (i) igneous rock
 - (ii) sedimentary rock
 - (iii) metamorphic rock
 - (iv) None of the above.
- (c) Wind load is calculated as per
 - (i) IS 875 PART 1
 - (ii) IS 875 PART 2
 - (iii) IS 875 PART 3
 - (iv) IS 875 PART 4
- (d) HVAC stands for
 - (i) Heating, Ventilation, and Air Conditioning
 - (ii) Heating, Ventilation, and Air Cooling
 - (iii) Humidity, Ventilation, and Air Conditioning
 - (iv) Humidity, Ventilation, and Air Cooling
- (e) The main function of alumina in brick earth is:
 - (i) to impart plasticity
 - (ii) to make the brick durable
 - (iii) to prevent the shrinkage
 - (iv) to make the brick impermeable
- (f) Traffic sign indicating speed limits categorised in
 - (i) regulatory sign
 - (ii) warning sign
 - (iii) informatory sign
 - (iv) prohibition sign
- (g) Bar chart is suitable for
 - (i) Minor works
 - (ii) Major works
 - (iii) Large projects
 - (iv) All the above
- (h) Plywood is made by bonding together thin layers of wood in such a way that the angle between grains of any layer to grains of layers is
 - (i) 0 degree
 - (ii) 30 degree
 - (iii) 45 degree
 - (iv) 90 degree
- (i) Preventive professional ethic focus on
 - (i) Preventing accident
 - (ii) What should not do
 - (iii) Positive Ethics
 - (iv) Aspiration of Engineer
- (j) The scale on which three dimensions can be measured is known as?
 - (i) Plane scale
 - (ii) Vernier scale
 - (iii) Diagonal scale
 - (iv) Chord scale

- Q.2 (a) What is civil engineering? Explain different branches of civil engineering. [7]
- (b) Discuss the entrepreneurial possibilities in Civil Engineering. [7]

- Q.3 (a) List 5 ancient monuments and 5 modern marvels and also list the uniqueness of each. [10]
- (b) Discuss the importance of contracts management. [4]

- Q.4** (a) Write a note on the characteristic of good building stone. [5]
(b) Describe the properties of good brick. [3]
(c) Explain briefly any four types of tests conducted on bricks in the laboratories to ascertain their qualities. [6]
- Q.5** (a) List the uses of plastic as building material. [5]
(b) Distinguish between paints and varnishes. [4]
(c) What are the requirements of good flooring tiles. [5]
- Q.6** (a) Briefly explain the principle of building planning. [7]
(b) What are the fundamental principles of surveying? Explain briefly. [7]
- Q.7** (a) List any four softwares which are used in Civil Engineering. Briefly discuss the importance of each. [7]
(b) Briefly explain the different modes of transportation. [7]
- Q.8** (a) Explain briefly: [3½ x 2 = 7]
(i) PPP in transport sector
(ii) Intelligent transport systems.
(b) What are the sources of solid wastes. Explain in detail. [7]
- Q.9** Write short notes on the following [14]
(a) Total station
(b) LIDAR
(c) GPS
(d) EDM
(e) BIM
(f) HSE systems in construction

