

(Time: 2 Hours)

- N.B. : (1) Question No.1 is compulsory  
(2) Attempt any three from the remaining  
(3) Figures to the right indicate full marks  
(4) Assume suitable data if necessary

- 1 Solve any five :- 15
- (a) Enlist different modes of transportation and explain its advantages in detail.  
(b) Explain role of Civil Engineer in Surveying.  
(c) Explain Ready Mix Concrete (RMC) and draw a flow chart of manufacturing process.  
(d) Write a short note on Building Sanitation along with its necessity.  
(e) Explain different types of Loads acting on building.  
(f) A plot owner proposed G+1 construction with  $150\text{m}^2$  Construction on each floor of size  $14 \times 19$  m. Find ground coverage and FSI proposed. If margins from all sides are 2m and FSI is 1 as per bye laws, state with reason whether plan will be sanctioned or not?
- 2 (a) Explain manufacturing process of concrete in detail. 10  
(b) Define Civil Engineering and Explain basics of Civil Engineering w.r.t Planning, Design, Construction and Maintenance. 05
- 3 (a) Write a short note on Air Pollution in detail explaining its sources, classifications and causes. 05  
(b) Explain field tests done on Bricks and Cement 05  
(c) Write a short note on Classification of Buildings 05
- 4 (a) Explain Principles of Planning in detail. Prepare a line plan of residential 1 BHK flat with all the details not to the scale mentioning the North direction. 10  
(b) Classify Surveying based on Nature of survey and Primary division of survey. 05
- 5 (a) Define Cement. What are different types of Cement? Explain Different tests done on Cement in lab. 05  
(b) The following consecutive readings were taken with leveling instruments at interval of 20 m. 10  
2.375, 1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.985, 0.435, 1.630, 2.255 and 3.630 m  
The instrument was shifted after the fourth and eighth readings. The last reading was taken on a BM of RL 110.200 m. Find the RL's of all the points.
- 6 (a) Write a short note on different disciplines of Civil Engineering. 10  
(b) How is AI used in Civil Engineering? Explain with any one example 05