

Roll No.

Total Pages : 3

312302

December, 2019

B.Tech. (Civil Engineering) - III SEMESTER

Introduction to Civil Engineering (HSMC 251)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.
2. Answer any four questions from Part-B in detail.
3. Different sub-parts of a question are to be attempted adjacent to each other.

PART - A

1. (a) What is civil engineering? (1.5)
(b) What do you understand by LEED ratings? (1.5)
(c) What is soil mechanics? (1.5)
(d) What do you understand by shallow foundations? (1.5)
(e) Name any four major construction equipments? (1.5)
(f) What is PPP in transport sector? (1.5)

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- (g) What do you understand by intelligent transport systems? (1.5)
- (h) Define the term 'GPS'? (1.5)
- (i) What do you understand by non-destructive testing systems? (1.5)
- (j) What is building information modelling? (1.5)

PART - B

- 2. (a) Explain the fundamentals of architectural design and town planning in detail. (7.5)
- (b) What are the possible scopes for a career in civil engineering? (7.5)
- 3. (a) What is prestressed concrete and reinforced cement concrete (explain in detail)? What are the two-basic difference between plain and reinforced cement concrete? (7.5)
- (b) Define bricks and explain in detail the classification of bricks? (7.5)
- 4. (a) What are the important points to keep in mind for the development of smart cities? Also explain importance of aesthetics in civil engineering. (7.5)

- (b) What are traditional surveying techniques? Also explain in detail Total station, its importance and its components. (7.5)

- 5. (a) What do you understand by wave and current systems in ocean engineering? (7.5)
- (b) Explain in detail underground structures multi-purpose reservoir projects? Also, what are various types of foundation? Explain in detail. (7.5)
- 6. (a) Define tall structures. Explain various types of bridges in detail. (7.5)
- (b) What are chimneys? Explain natural and induced draught cooling towers. (7.5)
- 7. (a) Explain the basics of corrosion phenomenon and other distress mechanisms. (7.5)
- (b) Explain sustainable and resilient pavement materials, its design and construction? (7.5)