

Total No. of Questions – [04]

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G.R. No.

U218-113(T1)

**OCTOBER 2018/ IN-SEM (T1)**

**S. Y. B. TECH. (Civil Engineering) (SEMESTER - I)**

**COURSE NAME: Infrastructure Engineering**

**COURSE CODE: CVUA21173**

**(PATTERN 2017)**

Time: [1 Hour]

[Max. Marks: 30]

**Instructions to candidates:**

- 1) Answer Q.1 OR Q.2 and Q.3 OR Q.4.
- 2) Figures to the right indicate full marks.
- 3) Use of scientific calculator is allowed
- 4) Use suitable data wherever required and state it clearly.

Q.1) a) Discuss three advantages and three drawbacks of 'PPP' with reference to Infrastructure Development. [6 marks]

b) Compare roadways, railways and waterways on the basis of (1)Cost of transport, (2)Time of transport, (3)Suitability in hilly regions and (4)Accessibility. [6 marks]

c) Briefly explain four positive and four negative points with reference to BRTS (Bus Rapid Transit System) for Indian Cities/ Towns. [4 marks]

**OR**

Q.2) a) Justify the statement: Rate of economic growth of an area primarily depends on the efficiency of road and rail networks. [6 marks]

b) State three advantages of Infrastructure Development in: (i)National context (ii)global context. [6 marks]

c) What is meant by a 'smart city'? Explain briefly any three essential and important features of a smart city. [4 marks]

Q.3) a) Discuss briefly three requirements of: (i)Good railway sleepers, and (ii)Good ballast. [6 marks]

b) Write a note on 'Metro Rail'. [4 marks]

c) Show all components of a 'permanent way' in a neat proportionate labelled sketch. [4 marks]

**OR**

Q.4) a) Explain the terms clearly with the help of sketch/ sketches: (i)coning of wheels of a train, and (ii)Tilting of rails. [6 marks]

b) Write a note on 'Mono Rail'. [4 marks]

c) State and briefly explain four functions of rails used for railways. [4 marks]

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