Total No. of Questions – [5] Total No. of Printed Pages: 03

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Paper code :- U117-103 (RE-FS&F)

RE

DECEMBER 2017 / ~~ENDSEM~~ EXAMINATION

F. Y. B. TECH. (COMMON) (SEMESTER - I)

COURSE NAME: Basic Civil Engineering. COURSE CODE: U117-103

(2017 PATTERN)

Time: [**2 Hours**] [Max. Marks: **50**]

Instructions to candidates:

1) **Answer Q.1 OR Q.2, Q.3 OR Q.4 and Q.5**
2) **Figures to the right indicate full marks.**
3) **Use of scientific calculator is allowed.**
4) **Use suitable data wherever required and state them clearly.**
5) **Neat sketches/ diagrams must be drawn wherever necessary.**

Q.1(a) Explain in detail importance of intelligent transportation system.Briefly explain any 2 essential components of ITS. [6]

(b) What is meant by 'road alignment'? Briefly explain any 2 guiding principles for road alignment. [6]

(c) State any 4 types of bridges. Explain any one type in brief with sketch. [4]

OR

Q.2(a) State six major sectors considered in infrastructure engineering. Discuss the importance of transportation sector for overall development of India. [6]

(b) Give comparison of airways, waterways and railways (as modes of transportation) in tabular form with respect to two points:

(i)Flexibility for users, (ii)Initial, operational and Maintenance Cost. [6]

(c) Draw a neat sketch of a bridge. Label all its components/ parts. [4]

Q.3(a) Draw neat schematic diagram of typical water supply system and briefly explain its four components (i.e. Works or Units in it). [6]

(b) What is '*Green House Effect*'? Explain it with a neat sketch. [4]

(c) Give classification, sources &effects of **air pollutants** in a tabular form. [4]

OR

Q4(a) State 3 categories of characteristics of water. Briefly explain minimum two characteristics under each category. [6]

(b) Explain in brief: importance of wastewater management [4]

(c) State 2 types of dams. Explain one type with appropriate sketch. [4]

Q.5 Attempt following multiple choice questions. **Rewrite the sentences 'a' to 't' and the most appropriate option as your Answer.**

a) In general, infrastructure means ..... [1]
(i)A structure with Infrared provisions for the safety of people.
(ii)Physical structures for living of the population.
(iii)Overall facilities, amenities and services.
(iv)Financial, power and agriculture sectors.

b) Object of 'Surveying and Planning' is to ..... [1]
(i)draw maps(ii)measure distances & areas
(iii)dividing a land in to plots (iv)All the above

c) Designof a building foundation is an application of ..... [1]
(i)Environmental Engineering (ii)Surveying and Planning
(iii)EarthquakeEngineering (iv)GeotechnicalEngineering

d) Determination of the cross sectional dimensions of beams of a building is an application of ..... [1]
(i)Structural Engineering (ii)Surveying and Planning
(iii)TransportationEngineering (iv)GeotechnicalEngineering

e) Out of the following; ..... does not fall in scope of Civil Engineer. [1]
(i)Design of spillways (ii)Design of frames
(iii)Design of transformers (iv)Supply of safe drinking water

f) Construction engineering mainly involves construction of ..... [1]
(i)Superstructure (ii)Sub-structure
(ii)Both i&ii (iv)Neither i or ii

g) Bearing capacity of soil can be determined by ..... [1]
(i)working stress test (ii)design load test
(iii)plinth area test (iv)plate load test

h) Full form of the term RMC is ..... [1]
(i)Road Mix Concrete (ii)Red Mixable Concrete
(iii)Ready Mix Concrete (iv)Readily Managed Concrete

i) Identify the 'Odd' material not fitting in the group of construction materials. [1]
(i)HYSD (ii)Mortar (iii)PCC (iv)RMC

j) In ..... type of structure, more floor area is available due to provision of thinner walls. [1]
(i)Framed (ii)Load bearing
(iii)Composite structure (iv)Walled structure

k) Main difference between plans and maps is ..... [1]
(i)Maps are used frequently as compared to plans
(ii)Plan is the 'top view' while map is not 'top view
(iii)Plan is not displayed while map is displayed
(iv)The scale adopted for them

l) Identify the correct application of GPS from the following. [1]
(i)Navigation (ii)Military operations
(iii)Neither i nor ii (iv)Both i and ii

m) Total Station **cannot** be used for ..... [1]
(i)Measurement of angles of elevation/ depression
(ii)Measuring area of irregular figure
(iii)Finding co-ordinates of stations
(iv)Measurement of sloping distances

n) Least count of a standard 4 m telescopic leveling staff is .... [1]
(i)0.0005 m (ii)0.005 m (iii)0.05 m (iv)None of above

o) If staff readings on successive points A and B in a leveling work are exactly the same (identical); ..... [1]
(i)Ground sloping down from point A to B
(ii)Ground sloping down from point B to A
(iii)Ground is plane and horizontal between A and B
(iv)Ground is very undulating between A and B

p) Positions of doors and windows on external walls to get desirable views and conceal undesirable views are considered in the planning principle ..... [1]
(i)Aspect (ii)Ventilation (iii)Prospect (iv)Privacy

q) For a building with total 50 m^2 built up area constructed on a plot of 200 m^2 area, the floor area ratio (FAR) will be ..... [1]
(i)4.0 (ii)0.25 (iii)0.025 (iv)0.40

r) Set-back distance is essential for ..... [1]
(i)Road bylaws (ii)Ground coverage of buildings
(iii)Road widening (iv)Commercial buildings only

s) Height of room plays an important role in ..... [1]
(i)Roominess (ii)Circulation (iii)Privacy (iv)Prospect

t) Identify which is **NOT** a green building rating system. [1]
(i)LEED (ii)CASBEE (iii)ENERGY BUILD (iv)BREEAM

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