

Total No. of Questions – [5]

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G.R. No.	
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Paper Code: 0117-103 [ESE]

DECEMBER 2017 / ENDSEM EXAMINATION

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

CY11173

COURSE NAME: Basic Civil Engineering. COURSE CODE: ~~0117-103~~
(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) State 3 advantages and 3 disadvantages of Transportation by traditional Railway. Draw labeled cross section of broad-gauge single railway track.

[6 marks]

(b) With neat sketches briefly explain any 2 types of Bridges.

[6 marks]

(c) What is meant by Intelligent Transportation System (ITS)?

State 3 advantages and 3 disadvantages of ITS.

[4 marks]

OR

Q.2 (a) What are Docks & Harbors? State their types and uses.

[6 marks]

(b) Briefly explain 6 factors for selecting an alignment for a highway.

[6 marks]

(c) Write 4 points of comparison between airways and waterways.

[4 marks]

Q.3 (a) Draw neat schematic diagram of a sewage treatment plant. State its components (Units) & their purpose (use) in 1 sentence each.

[6 marks]

(b) What is meant by air pollution? State 3 ill-effects of air pollution and 3 ways of reducing or controlling air pollution.

[4 marks]

(c) Write a note on 'e-Waste Management'.

[4 marks]

OR

Q4 (a) State 4 advantages and 4 disadvantages (Drawbacks) of Earthen Dam. State 4 objectives of water supply system.

[6 marks]

(b) Briefly explain Rain Water Harvesting with sketch.

[4 marks]

(c) Write sources of solid wastes. Briefly explain solid waste management.

[4 marks]

Q.5 Attempt following multiple choice questions.

- a) is not a role of Civil Engineer in Mechanical Engineering branch. [1]
(i)Design of bridge (ii)Design of machine foundation
(iii)Design of truss for shed (iv)Design of shafts
- b) is not an application of Environmental Engineering. [1]
(i)e-waste management (ii)Design of filters
(iii)Analysis of waste water (iv)Design of turbines
- c) Knowledge of Structural Engineering is NOT required for [1]
(i)Design of turbines (ii)Design of truss for shed
(iii)Concrete mix design (iv)Design of beams
- d) Identify CORRECT roles of Civil Engineer. [1]
(i)Surveyor (ii)Valuer (iii)Both i and ii (iv)Neither i nor ii
- e) Knowledge of Geotechnical Engineering is required for [1]
(i)Soil classification (ii)Beam design
(iii)Structural analysis (iv)Design of a dam
- f) Which of the following is not a type of shallow foundation? [1]
(i)Piles (ii)Combined footing (iii)Strap footing (iv)None of these
- g) is not a category of smart material. [1]
(i)Piezoelectric (ii)Shape memory alloys
(iii)Alum (iv)Photochromatic
- h) Meaning of 1:2:4 concrete is [1]
(i)1 part cement: 2 parts lime: 4 parts sand
(ii)1 part cement: 2 parts sand: 4 parts coarse aggregate
(iii)1 part cement: 2 parts coarse aggregate: 4 parts sand
(iv)1 part cement: 2 parts water: 4 parts sand
- i) For which of the following brick is **not** used? [1]
(i)Compound Wall (ii)Flooring (iii)Plinth (iv)Window Sill
- j) Which of the following is not a type of concrete? [1]
(i)Cast in situ (ii)RCC (iii)M 50 (iv)PCC 25
- k) Which of the following is **not** a part of Dumpy Level? [1]
(i)Tangent screw (ii)Eye piece
(iii)Focusing screw (iv)Cube corner prism
- l) Identify the INCORRECT step in chain surveying. [1]
(i)Offsetting (ii)Centering
(iii)Ranging (iv)Reconnaissance Survey
- m) An Engineer's scale corresponding to R.F. of 1:100000 is [1]
(i)1cm=1km (ii)1cm=10km (iii)1:100km (iv)None of these
- n) In a leveling work, if BM and HI values are 300.500 m and 302.655 m; then staff reading is and is called [1]
(i)2.115m, BS (ii)-2.115m, BS
(iii)2.115m, IS (iv)-2.115 m, IS

- o) A contour map shows a series of loops such that RLs increase uniformly towards smaller inner loops. Hence it shows a [1]
 (i)Pond or lake (ii)Valley (iii)Hill (iv)Cliff
- p) Planning principle 'prospect' **does not** deal with [1]
 (i)Deriving benefits of nature (ii)External wall for every room
 (iii)Positions of doors (iv)Positions of windows
- q) Which is an **incorrect statement** out of following? [1]
 (i)FSI is different in gaothan and non-gaothan areas in a city
 (ii)Front margin is generally more than side and rear margins
 (iii)Carpet area is generally about 0.7 times the built-up area
 (iv)Carpet area is generally about 1.2 times the built-up area
- r) Which is not relevant to Building Bye-laws? [1]
 (i)Population density control (ii)Uniform within a state
 (iii)Set-back distances (iv)Minimum plot size
- s) Identify the ODD TERM from the following. [1]
 (i)GRIHA (ii)Design (iii)Durability (iv)Eco-friendly Materials
- t) Which of the following is NOT a component of smart city? [1]
 (i)Efficient Transportation System (ii)Adequate power supply
 (iii)Sustainable environment (iv)None of these
