

Total No. of Questions : 12]

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[3761]-104

F. E. (Semester - I) Examination - 2010

BASIC CIVIL AND ENVIRONMENTAL ENGINEERING

(June 2008 Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions :

- (1) Attempt Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6 from section I and Q. 7 or Q.8, Q.9 or Q. 10, Q. 11 or Q.12 from section II.
- (2) Answers to the **two sections** should be written in **separate books**.
- (3) Black figures to the right indicate full marks.
- (4) Neat diagrams must be drawn wherever necessary.
- (5) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.
- (6) Assume suitable data, if necessary.

SECTION - I

- Q.1) (A) 21st Century is the era of interdisciplinary engineering. Explain the statement. [06]
- (B) Write a brief note on following and give practical application : [06]
- (1) Environmental Engineering
 - (2) Geotechnical Engineering
- (C) Enlist and briefly explain the infrastructural facilities that are to be provided in a locality for its development. (Any 4). [04]

OR



- Q.2)** (A) Define the term 'GAUGE' and show this with the help of a sketch. Also, state the various types of gauges with their dimensions. [06]
- (B) Differentiate between the following w.r.t. any 3 points : [06]
- (1) Estimation and Valuation
 - (2) Flexible Pavement and Rigid Pavement
- (C) Enumerate the functions, a Civil Engineer has to perform in construction of dams. [04]

- Q.3)** (A) Write notes on : [06]
- (1) Raft Foundation
 - (2) Settlement of Foundation
- (B) Discuss how smart-materials can be used in construction ? [06]
- (C) What are Deep Foundations ? What is the difference between End Bearing Pile and Friction Pile ? [04]

OR

- Q.4)** (A) What are the different types of steel sections used in construction ? Explain in brief. [06]
- (B) Compare Load Bearing, Framed Structure and Composite Structure. [06]
- (C) Write a note on Recycling of Materials. [04]

- Q.5)** (A) Explain the following : [06]
- (1) Change Point
 - (2) Back Sight Reading
 - (3) Intermediate Sight Reading
 - (4) Fore Sight Reading
 - (5) Height of Instrument
 - (6) GTS Bench Mark
- (B) Briefly explain the following instruments : [04]
- (1) Digital Theodolite
 - (2) Digital Planimeter
- (C) Following staff readings were observed on a continuously sloping ground, along the centre line of a road, with the help of a dumpy level and 4m levelling staff at 20m interval. The

