

FOURTH SEMESTER

B.E. (ENE)

MID SEM EXAMINATION

March 2007

ENE-211 WATER ENGINEERING

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer **ALL** questions.

Answer to the point.

Assume suitable missing data, if any.

- 1[a] Discuss the need and criteria of water quality standards. What are the standards for drinking water for the following parameters (a) sulphate (b) total dissolved solids (c) fluoride (d) chromium (e) Iron (f) Nitrate. **2**
- [b] What is the necessity of using coagulants in sedimentation. What are the various chemical coagulants which are commonly used. Discuss the factors on which the dose of coagulant depends. **3**
- 2[a] Derive the expression for the settling velocity of discrete particles in a sedimentation basin. **3**
- [b] Comment on the following statement "In sedimentation tank the surface area and the over flow rate rather than the detention period should govern the design". **2**
- 3[a] Differentiate between slow sand filters and rapid sand filters. **4**
- [b] What is the difference between coagulation and flocculation? **1**
- 4[a] Explain break point chlorination. Why is break point chlorination so called? Explain the significance of pre chlorination, post chlorination and super chlorination. **2.5**
- [b] The water demand of a town is 3×10^6 lit/day. If the disinfection is to be done by bleaching powder having 45% available chlorine determine the quantity of the bleaching powder required per day. The required dose of chlorine at the water works is 0.3 ppm for disinfection. **2.5**

Total No. of Pages 1

Roll No.

FOURTH SEMESTER

B.E.(ENE)

MID SEM EXAMINATION

March 2007

**ENE-212 ENGINEERING ECONOMICS &
ACCOUNTANCY**

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer ALL questions.

Assume suitable missing data, if any.

1 Fill up the blanks:

- g. Tea and coffee are.....goods
- h. In, there is only one producer.
- i. Income tax is.....tax.
- j. Capital gets.....for its contribution in production.
- k. Double entry is a system of.....
- l.cost increases with increase in production.

3

2 Differentiate between

- d. Commercial bank and Central bank
- e. Oligopoly and Monopolistic Competition
- f. Cheque and Draft

9

3 Why perfect competition is a hypothetical situation?

2

4 What do you mean by standard cost?

2

5 What is subsidy?

2

6 What do you mean by Accountancy?

2

Total No. of Pages 1

Roll No.

FOURTH SEMESTER

B.E. (ENE)

MID SEM EXAMINATION

March 2007

**ENE-213 BUILDING MATERIALS, BUILDING
CONSTRUCTION & SPECIFICATIONS**

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer ALL questions.

Assume suitable missing data, if any.

- 1 Why combined footing is provided. Sketch combined footing for two columns carrying unequal loads. 4
- 2 What are the essential features of single Flemish and double Flemish bond. 4
- 3 Plan a stair case for a residential building in which the vertical distance between each floor is 3.38 m. The size of stair hall is limited to 4.5 m x 3.2 m. 4
- 4 What is fire load. Discuss the fire resisting properties of concrete, stones, brick and steel. 4
- 5 Discuss the analytical method of designing a masonry wall. 4

Total No. of Pages 1

Roll No.

FOURTH SEMESTER

B.E. (ENE)

MID SEM EXAMINATION

March 2007

**ENE-214 EARTH SCIENCES GIS & NATURAL
POLLUTION**

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer ALL questions.

Draw neat sketches wherever required.

- 1[a] Core of the Earth's thickness is (i) 2900 kms (ii) 3900 kms (iii) 1900 kms (iv) 2950 kms
- [b] Fracture of quartz is (i) even (ii) uneven (iii) conchoidal (iv) hackly
- [c] Luster of muscovite is (i) vitreous (ii) pearly (iii) metallic (iv) silky
- [d] River piracy occurs in which stage of river development (i) old (ii) youth (iii) mature
- [e] Cuesta is a result of : (i) deposition (ii) erosion (iii) corrosion (iv) attrition
- [f] What kind of rock is Gabbro : (i) acidic (ii) intermediate (iii) basic (iv) ultrabasic
- [g] Extinction of Quartz is (i) wavy (ii) parallel (iii) oblique (iv) striate
- [h] Mechanical sedimentary structure are : (i) concretionary (ii) joints (iii) ripple marks (iv) oolitic structure
- [i] Pyroelectricity is given by: (i) Tourmaline (ii) Quartz (iii) Montmorillonite (iv) feldspar
- [j] Granulose structure is a result of which metamorphism : (i) diagenetic (ii) plutonic (iii) metasomatism (iv) dynamic
- [k] Differentiate between : Crystoblastic and palimpsest textures
- [l] Differentiate between : True dip and apparent dip.

$\frac{1}{2} \times 12 = 6$

- 2 Describe the terminology of folds and the classification folds on the basis of Axial plane and limbs. What is mode of formation of igneous rocks? Explain.. 7
- 3 Give the geological work done by *running water* and the importance of *wind erosion*. 7

FOURTH SEMESTER

B.E.(ENE)

MID SEM EXAMINATION

March

2007

ENE-215 DESIGN OF STRUCTURES

Time: 1 Hour 30 Minutes

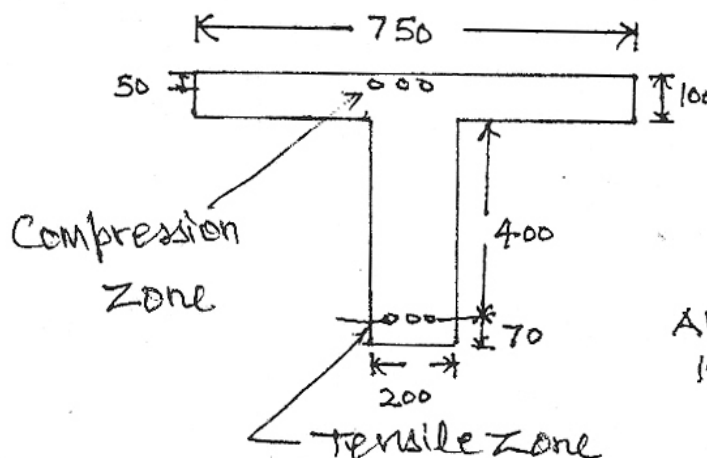
Max. Marks : 20

Note : Answer any **FOUR** questions.

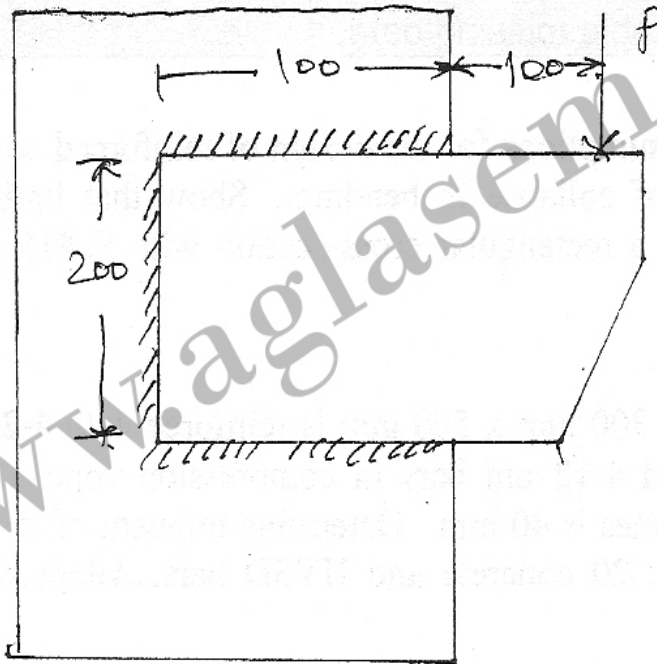
Use of IS 456, IS 875 and IS 800 permitted.

Assume suitable missing data, if any.

- 1 What are the assumptions for the design of reinforced concrete section for limit state of collapse in bending. Show that limiting depth of neutral axis for a rectangular cross-section with Fe415 grade steel is $0.48d$. 5
- 2 A beam section $300 \text{ mm} \times 560 \text{ mm}$ is reinforce with 4-25 mm bars in tensile zone and 4-12 mm bars in compression zone. The effective cover to both zones is 40 mm. Determine moment of resistance of the section. Use M-20 concrete and HYSD bars. Adopt working stress method. 5
- 3 Calculate the amount of steel required in a T-beam to develop a moment of resistance of 300 kNm at working load. Use M-20 mix and Fe415 grade steel. The dimensions of beam section's shown below. 5

All dimensions are
in mm

- 4 Two plates 12 mm thick are joined by double riveted double cover butt joint. Use 20 mm diameter, power driven rivets and design the pitch of the rivets. Also, find the efficiency of the joints. 5
- 5 Fig. shows an eccentric welded connection with 6 mm fillet welds. Determine the greatest load P per bracket plate which can be applied on the connection if the shear stress in the weld is not to exceed 108 MPa. 5



All dimensions are in mm.