

FOURTH SEMESTER

B.E. (ENE)

MID SEMESTER EXAMINATION MARCH 2005

ENE-211 WATER ENGINEERING

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer **ALL** questions.
Answer to the point.

- 1[a] Discuss the importance and necessity for water supply schemes.
[b] Explain the connection between "public Health" and Engineering.
[c] How will you find water demand. Enumerate various types of water demand. Discuss any one.
[d] Discuss the importance of fire demand in water supply schemes. How will you find fire demand for a city having population more than 2,00,000.

(2x4)

- 2[a] What do you mean by "per capita demand". Also discuss various factors affecting per capita demand.
[b] What is coincident demand. How will you find it.

(4)

- 3[a] Discuss various factors affecting population growth. Also discuss various components of population growth curve.
[b] Enumerate various methods for population forecasting. Find the population of a city in year 2031 by any two methods whose census data is given below. Also comment on result.

Year	1951	1961	1971	1981	1991	2001
Population (in thousands)	45	65	76	87	96	105

(4)

- 4[a] Enumerate various sources of water supply. Also discuss the criteria for selection of source of water supply.
[b] What are various types of intakes. Discuss canal intake with the help of a neat sketch.

(4)

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FOURTH SEMESTER

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MID SEMESTER EXAMINATION **MARCH**  **2005**

ENE-212 ENGINEERING ECONOMICS & ACCOUNTANCY

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Attempt any *ALL* questions.
Assume suitable missing data, if any

1. Fill up the blanks: 3
 - [a] _____ is the Chairman of the Planning Commission of India.
 - [b] In case of giffen goods, increase in income leads to _____ in demand
 - [c] Sales tax is _____ tax.
 - [d] There is only one producer in _____ type of market.
 - [e] Sand near sea beach is _____ good.
 - [f] As labour gets wage, capital gets _____ .
2. Differentiate between following : 9
 - [a] Opportunity cost vs. Actual cost
 - [b] Tax vs. Subsidy
 - [c] Monopolistic competition vs. Perfect competition.
3. Discuss various purposes of Budget. 2
4. What do you mean by Accountancy 2
5. Discuss relevance of Research & Development cost under Life cycle cost. 2
6. Discuss Price Elasticity of Demand? 2

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FOURTH SEMESTER

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MID SEMESTER EXAMINATION **MARCH**  **2005**

ENE-213 BUILDING MATERIALS .. BUILDING CONSTRUCTION & SPECIFICATION

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Attempt **ALL** questions.
Give neat sketches where ever required
Assume suitable missing data, if any.

1. Discuss the contribution of cement compounds to the strength of cement. 2
2. How the setting times of an OPC is evaluated in the laboratory. 3
3. Define fineness modulus of an aggregate. Explain with a suitable example. 3
4. What is the role of accelerating and retarding admixtures in cement concrete. 2
5. How slump value and compacting factor of concrete are correlated. Discuss factors affecting workability. 3
6. Define water cement ratio of a concrete How it affects strength of concrete. 2
7. Discuss any three types of shallow foundation. 3
8. Define following terms with respect to masonry. 2
king closer, mitred closer, random rubble masonry, arch.

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FOURTH SEMESTER

B.E. (ENE)

MID SEMESTER EXAMINATION **MARCH 2005**

ENE-214 EARTH SCIENCE GIS & NATURAL POLLUTION

Time: 1 Hour 30 Minutes

Max. Marks : 20

Note : Answer **ALL** questions.
Draw neat sketches where ever required
Assume suitable missing data, if any.

- 1[a] Earth's axis is tilted at : (a) 24° (ii) 23° (iii) 22° (iv) 23°
- [b] Galena belong to which crystallographic system :
(i) monoclinic (ii) orthorhombic (iii) tetragonal (iv) isometric
- [c] Calcite always breaks into rhomb shaped pieces because of :
(i) One set of cleavage (ii) No cleavage (iii) Three sets of cleavage.
- [d] Orthorhombic crystallographic system has ;
(i) $a=b \neq c$ (All perpendicular to each other)
(ii) $a=b=c$; (All not perpendicular to each other)
(iii) $a \neq b \neq c$ (All perpendicular to each other)
- [e] Select the minerals for Moh's hardness scale and arrange them in order of decreasing hardness from the following :
(i) Beryl (ii) Diamond (iii) Talc (iv) Hornblende (v) Quartz
(vi) Muscovite (vii) Topaz (viii) Fluorspar (ix) Apatite
(x) Corundum (xi) Calcite and (x) Gypsum.
- [f] Hornblende has (i) One set of cleavage (ii) Two sets of cleavages (iii) Three sets of cleavages at right angle to each other (iv) Three sets of cleavages at an angle to each other.
- [g] Basalt's texture is : (i) porphyritic (ii) Felsitic (iii) Glassy (iv) Course grained
- [h] Major minerals of Granite are : (i) feldspar and Fe minerals (ii) quartz and feldspar (iii) Fe and Mg minerals (iv) pure silica minerals.

- [i] Piezoelectricity is given by :
(i) Tourmaline (ii) Quartz (iii) Montmorillonite (iv) Feldspar
- [j] Agent of weathering is : (i) running water (ii) Gravity (iii) Vegetation (iv) Time
- [k] Major controlling factor transportation by wind is : (i) Velocity (ii) Nature of rocks (iii) Vegetation (iv) Rock fragments.
- [l] River capture occurs in which stage of river : (i) old (ii) initial (iii) Youth (iv) mature
- [m] Core of the Earth is : (i) Liquid (ii) Liquid & Solid (iii) Solid & Liquid (iv) Solid ($\frac{1}{2} \times 12$)
- 2 Give an account of geological work done by running water.
Give the classification of folds based on Axial plane and limbs. (7)
- 3 Discuss the physical properties of minerals with examples.
Give the tabular classification of igneous rocks. (7)

FOURTH SEMESTER**B.E. (ENE)****MID SEMESTER EXAMINATION MARCH 2005****ENE-215 DESIGN OF STRUCTURES***Time: 1 Hour 30 Minutes**Max. Marks : 20*

Note : Question No. **ONE** is compulsory. Answer any **TWO** questions from the remaining. Use of IS: 456-2000 is permitted. Assume suitable missing data, if any.

- 1[a] Explain various types of limit states. (2)
 - [b] Define URS, BS and ORS. (2)
 - [c] Explain the mechanism of shear resistance of RCC beam with shear reinforcement using 2D-truss analogy. (2)
 - [d] Explain characteristic loads and characteristic strength. (2)
- 2 Design a T-beam section having rib width 250 mm, flange width 1200 mm, thickness of slab 125 mm and effective depth 450 mm., when subjected to a moment of 400 kNm. Consider concrete of Grade M_{20} and steel Fe 415. (6)
 - 3 Analyze a rectangular beam section of 300 mm width and 500 mm effective depth to determine the ultimate moment of resistance when 4-25# and 4-16# have been provided as tension and compression reinforcement respectively. Consider concrete of Grade M_{15} and steel of Grade Fe415. (6)
 - 4 Design the shear reinforcement for the RCC Beam shown in figure 1. Consider concrete of Grade M_{20} and steel of Grade Fe415. (6)

