

## Civil Engineering Department

### ENVIRONMENTAL ENGG.

#### Sample Questions:

1. How does carbon monoxide affect the human body?
  - a) It does not allow binding of oxygen with haemoglobin
  - b) It reduces the surface area of the alveoli and disrupts gaseous transfers
  - c) It causes the liver to malfunction, increasing bile secretion
  - d) It reduces the body's tendency to absorb water thereby making us feel dehydrate
2. Disinfection is the function of which of the following variables?
  - i. Concentration of disinfectant
  - ii. Concentration of organisms
  - iii. Temperature
  - iv. Time of contact
  - a) i, ii
  - b) i, ii, iii
  - c) i, ii, iii, iv
  - d) ii, iii, iv
- Q.3. Which of the following is correct regarding disposal of waste by land filling?
  - a) Economical method
  - b) Preferred in low lying areas
  - c) Foul gases are not produced
  - d) Separation of different types of waste not required
- Q.4. Which method of population forecast is suitable when extension is required for small duration and past record is available for long duration?
  - a) Graphical comparison method
  - b) Graphical extension method
  - c) Logistic curve method
  - d) Zoning method
- Q.5. Estimate the water content of air that is in equilibrium with pure water at  $68^{\circ}\text{F} = 20^{\circ}\text{C}$ 
  - a) 0.045
  - b) 0.054
  - c) 0.078
  - d) 0.023

## GEOTECHNICAL ENGG

### Sample Questions:

1. A dry sand specimen was tested in a tri-axial machine with the cell pressure of 50 kPa. If the deviator stress at failure was 100 kPa, the angle of shearing resistance is  
(a)  $30^\circ$  (b)  $15^\circ$  (c)  $45^\circ$  (d)  $60^\circ$
2. A gravity R.W. of top width 1 m and base width 3 m and total height of 10 m ( $\gamma_{\text{wall}} = 22 \text{ kN/m}^3$ ) is retaining dry cohesionless backfill of  $\gamma = 20 \text{ kN/m}^3$  and  $\phi = 30^\circ$ , then the F.S. against sliding will be,  
(a) 2.3 (b) 1.3 (c) 3.3 (d) 2.5
3. Total number of stress components at a point within a soil mass loaded at its boundary is  
(a) 3 (b) 6 (c) 9 (d) 16
4. The bearing capacity of piles is determined by  
a) Dynamic formula b) Static formula  
c) Pile load tests d) All the above
5. If geosynthetic allows for adequate fluid flow with limited migration of soil particles across its plane over a projected service lifetime of the application under consideration, then this function of geosynthetic is called  
(a) Filtration.  
(b) Separation.  
(c) Drainage.  
(d) Fluid barrier.



## TRANSPORTATION ENGG.

### Sample Questions:

1. In travel demand modeling, trip distribution belongs to the  
(a) first stage (b) second stage (c) third stage (d) none of these
2. Which machine is preferred for abrasion test?  
(a) Vicat's mould (b) Los Angeles (c) Flakiness Gauge (d) Elongation Gauge
3. The "3-Es" of traffic engineering stand for?  
(a) Enforcement, empowerment and eradication (b) Engineering, education and expulsion  
(c) Engineering, education and enforcement (d) Engineering, education and enthusiasm
4. The camber is checked at every interval of \_\_\_\_\_  
(a) 10 m (b) 20 m (c) 30 m (d) 40 m
5. An intersection that is provided for different levels of road is called \_\_\_\_\_  
(a) Intersection at grade (b) Rotary intersection  
(c) Channelized intersection (d) Grade separated intersections

## Water Resoure Engineering

### Sample Questions:

1. If a stream function is given by  $\psi = x^3 - y^3$ , then
  - a) It is an unsteady, an irrotational flow case
  - b) A potential function exists
  - c) It is a steady, an irrotational flow
  - d) It is a possible flow, rotational flow case
2. A 6-hr unit hydrograph is triangular in shape with a base of 75 hr and a peak discharge of  $12 \text{ m}^3/\text{s}$ . This unit hydrograph refers to a catchment of area, in  $\text{km}^2$ 
  - a) 65
  - b) 162
  - c) 320
  - d) 1800
3. A canal is to be carried over a natural drainage. Which structure will you provide at this place
  - a) A syphon
  - b) An aqueduct
  - c) A bridge
  - d) A cross-drainage structure
4. An 8 hour storm had 8 cm of rainfall, and the resulting runoff was 4 cm. If the  $\phi$  – index remains at the same value, a rainfall of 12 cm in a 15 hour storm produces a runoff in this catchment of
  - a) 4.5 cm
  - b) 6.0 cm
  - c) 8.0 cm
  - d) 10.5 cm
5. A straight line is fitted to a plot between return period on logarithmic scale and flood peak on an ordinary scale. The 10 year and 100 year floods are obtained as 110 cumecs and 220 cumecs respectively. What would be the magnitude of 1000 year flood
  - a) 330 cumecs
  - b) 440 cumecs
  - c) 550 cumecs
  - d) 660 cumecs

## Disaster Assessment & Mitigation

### Sample Questions:

1. High intensity and long duration of rainfall causes  
(a) Earthquakes    (b) Floods                      (c) Landslides                      (d) Cyclone
2. In India, Cyclone is tracked through which satellite?  
(a) INSAT              (b) IRS                      (c) Ocean SAT                      (d) None of the above
3. Intensity of an earthquake is measured by  
(a) Modified Mercalli scale                      (b) Richter scale  
(c) Seismograph                      (d) None of the above
4. The Disaster Management Act was made in  
(a) 2006                      (b) 2003                      (c) 2005                      (d) 2009
5. The National Disaster Management Authority (NDMA) is headed by  
(a) Prime Minister of India                      (b) President of India  
(c) Governor of States                      (d) Chief Minister of States