Sixth Semester B.E. Degree Examination, June/July 2015
Rural Water Supply and Sanitation

Time: 3 hrs. 　　　　　　　　　　　　　　　　　　　　　　　Max. Marks:100

Note: 1. *Answer any FIVE full questions, selecting atleast TWO questions from each part.*
**　　　2. *Write neat sketches, wherever necessary.***

PART – A

1　a. List out the various sources of water that is available on the earth and explain. (10 Marks)
　　b. How do you protect new wells from contamination? Give step by step procedure. (05 Marks)
　　c. Write down the drinking water quality standards for the following : (05 Marks)
　　　i) pH　　ii) Chlorides　　iii) Nitrates　　iv) Fluoride and　v) Total Hardness.

2　a. Comparison between Reciprocating pumps and Centrifugal pumps. (10 Marks)
　　b. Explain any five disinfecting methods for water. (10 Marks)

3　a. What are the main objectives of Rural sanitation in villages? Brief out. (08 Marks)
　　b. With the aid of neat sketches, describe the following types of latrines :
　　　i) Pit Privy and　　ii) Aqua Privy. (12 Marks)

4　a. Elaborate the composting methods practiced in rural areas on the mixture of night soil and refuse. (10 Marks)
　　b. How does one can practice Roof – top rain water harvesting? Explain. (10 Marks)

PART – B

5　a. Define i) Infection　　ii) Epidemic. (04 Marks)
　　b. Explain the Epidemiologic cycle. (06 Marks)
　　c. What are the types of collection and transportation systems adopted for refuse? Explain. (10 Marks)

6　a. Brief out the methods of disposal of refuse in rural areas. (10 Marks)
　　b. With the aid of neat sketch, write a note on Bio – gas plant. (10 Marks)

7　a. Write down and explain the essentials of a milk sanitation. (10 Marks)
　　b. Mention the types of pasteurizing the milk and describe them. (10 Marks)

8　Write short notes on any Four from following :
　　a. Mosquito related diseases.
　　b. Deflouridation Technique.
　　c. Break point chlorination.
　　d. Trench composting.
　　e. Advantages and disadvantages of separate system and water carriage system. (20 Marks)

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Sixth Semester B.E. Degree Examination, June/July 2015
Traffic Engineering

Time: 3 hrs.

Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. Briefly explain the human factors governing the road user behaviour. **(10 Marks)**
   b. List and explain the resistances which effect on motion of vehicle. **(10 Marks)**

2 a. Explain the concept of power requirement of vehicle. **(10 Marks)**
   b. What are the objectives of traffic volume study? **(06 Marks)**
   c. Write a note on thirtieth highest hourly volume. **(04 Marks)**

3 a. Define PCU. List and explain its characteristics. Also mention recommended IRC values of PCU. **(10 Marks)**
   b. With a neat sketch explain the concept of origin and destination survey. **(10 Marks)**

4 a. With the help of sketches briefly explain ON – Street parking. **(10 Marks)**
   b. List and explain the various causes of accidents. **(10 Marks)**

PART – B

5 a. Show the relationship between the variables Q, K and $\overline{V}_s$. **(10 Marks)**
   b. A toll booth at the entrance to a bridge can handle 120 Veh/hr the time to process the vehicle being exponentially distributed. The flow is 90 Veh/hr with Poisson arrival pattern. Determine   i) The average number of vehicle in the systems.   ii) The length of queue.
   iii) The average time spend by the vehicle in the system.
   iv) The average time spend by the vehicle in the queue. **(10 Marks)**

6 a. On a motorway, the number of vehicles.
   Arriving from one direction in successive 10 seconds intervals was counted and recorded in table.

Vehicles arriving in 10 seconds intervals	Frequency
0	11
1	28
2	30
3	18
4	8
5	4
6	1
7 and over	0

   Find out the mean rate of arrival and with the help of Poisson distribution and compare the observed frequency. Does the data suggest that arrival pattern can be considered as random? **(12 Marks)**
   b. What are the advantages of simulating techniques? **(08 Marks)**

7 a. List and explain the types of traffic signals. **(10 Marks)**
   b. Explain any five types of regulatory signs. **(10 Marks)**

8 Write a note on
   a) Rotary intersection   b) Grade separated intersection
   c) Intelligent transport system   d) Street lighting. **(20 Marks)**

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