KUMARAGURU
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B.E DEGREE EXAMINATIONS: MAY 2017

(Regulation 2014)

Sixth Semester

CIVIL ENGINEERING

U14CETE12: Traffic Engineering and Management

COURSE OUTCOMES

CO1:   Analyze traffic problems and plan for traffic systems for various uses.
CO2:   Conduct traffic survey
CO3:   Design channels, intersections, signals and parking arrangements.
CO4:   Plan for integration of public transport system
CO5:   Develop traffic management systems

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1.   Matching type item with multiple choice code   CO1   [K1]

List I	List II
A.Headway	i.spot speed of vehicle
B.Pneumatic contact strips	ii.traffic control device
C.road sign	iii.Pedestrian area
D.Refuge area	iv.Interval in terms of delay

	A	B	C	D
a)	ii	i	iii	iv
b)	iii	iv	ii	i
c)	i	iii	iv	ii
d)	iv	ii	i	iii

2.   If *V* is the design speed in km/hour and *R* is the radius of the curve of a hill road, the super-   CO2   [K2]

elevation

a) $e = \dfrac{V}{127R}$ b) $e = \dfrac{V^2}{127R}$

c) $e = \dfrac{V^2}{225R}$ d) $e = \dfrac{V}{225R}$

3. Consider the following statement.   CO3 [K1]

   1. The spacing between the lamps can be determined by Height of lamp and length of road
   2. The spacing between the lamps can be determined by Lamp lumen and width of road
   3. The spacing between the lamps can be determined by Average flux and maintenance factor
   4. The spacing between the lamps can be determined by illumination capacity of lamp

   Find the correct statements

   a) 1,3   b) 1,4

   c) 1,2   d) 2,3

4. The vehicle in front of you indicates left then you will   CO2 [K4]

   a) Overtake from left   b) Slow down and approach with caution

   c) Overtake quickly from right   d) urge the driver to move out of the way

5. Assertion (A):Traffic island is a raised area between traffic lanes and constructed within the road way to control the vehicle movements   CO2 [K1]

   Reason (R): Traffic island are provided to increase the conflict area

   a) Both A and R are Individually true and R is the correct explanation of A   b) Both A and R are Individually true but R is not the correct explanation of A

   c) A is true but R is false   d) A is false but R is true

6. Right turning movement can be done by   CO2 [K4]

   a) T turn   b) F turn

   c) u turn   d) I turn

7. For a vehicle moving with a speed of 80 km per hour, the brake reaction time, in ordinary cases, is   CO2 [K2]

   a) 1sec   b) 3 sec

   c) 2 sec   d) 2.5 sec

8. A design speed and width of cycle track is about   CO2 [K2]

   a) 32 km/h and 0.5 m to 1.0 mt wide   b) 30 km/h and 1.5 m to 2.0 mt wide

   c) 35 km/h and 0.5 m to 2.0 mt wide   d) 40 km/h and 1.5 m to 3.0 mt wide

9. Delays due to either internal friction within the traffic due to other traffic movements are called   CO1 [K1]

   a) Fixed delay   b) Operational delay

   c) Vehicle delay   d) Manual delay

10 How can you distinguish a transport vehicle		CO2 [K4]

a) By colour of the vehicle   b) By looking at the number plate of the vehicle.

c) by looking at the tyre size   d) By looking the Body of the vechile

PART B (10 x 2 = 20 Marks)
(Answer not more than 40 words)

11.	Define traffic engineering management.	CO4	[K1]
12.	What is "PCU"	CO2	[K2]
13.	What are the purposes of collecting the traffic survey data?	CO2	[K2]
14.	Define spot speed.	CO4	[K1]
15.	Define Time Cycle, Phase and Interval	CO4	[K1]
16.	List out any four regulatory signs.	CO1	[K1]
17.	What are the advantages of traffic signals?	CO2	[K2]
18.	What are the drawbacks of conventional roundabout?	CO2	[K2]
19.	What is meant by tidal flow operation in traffic management?	CO2	[K2]
20.	Define transportation system management.	CO1	[K1]

Answer any FIVE Questions:-
PART C (5 x 14 = 70 Marks)
(Answer not more than 300 words)

Q.No. 21 is Compulsory

21.	Explain the various vehicular characteristics which affect the road design and the traffic performance.	CO2	[K2]
22.	Enumerate the different methods of carrying out traffic volume studies. Briefly explain the principle of each method.	CO2	[K3]

23. i) Discuss the advantages and limitations of grade separated intersection.   (8)   CO1   [K2]

    ii) Explain the factors to be considered in rotary intersection design.   (6)   CO2   [K2]

24. i) What are the causes road accidents? Explain its effects.   (10)   CO2   [K2]

    ii) Illustrate the preventive methods of road accidents.   (4)   CO1   [K3]

25. Explain the various types of traffic signals and their functions. How the signal timings are decided.   COL   [K$_L$]

26. i) Illustrate with neat sketch about the type of road markings that are commonly used. (8) CO1 [K3]

ii) What are the impact of traffic on air pollution? Urban Air pollution increases due to improper management of traffic. Justify the statement. (6) CO2 [K2]

27. Explain the application of ITS (Intelligent Transport Systems) in traffic management with reference to Indian conditions. CO2 [K2]

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