GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, December – 2020

(Fifth Semester)

BCEPC5020– TRANSPORTATION ENGINEERING- 1

(Civil Engineering)

Time: 2 hrs   Maximum:50 Marks

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)   **(1 x 10 = 10 Marks)**

Q.1. Answer *ALL* questions

a. The regular itineraries on which sea transport is based are classified as

(i)green routes   (ii)maritime routes

(iii)freight routes   (iv)stack routes

b. The current highway development works in India are undertaken by?

(i)NHAI   (ii)Govt. of India

(iii)State governments   (iv)NHDP

c. The most important factor that is required for road geometrics is

(i)SSD   (ii)OSD

(iii) ISD   (iv)Speed of vehicle

d. The layer which is constructed above embankment is called

(i)Sub grade   (ii)Fill

(iii)Base   (iv)Sub base

e. The highest CBR number is required for

(i)Pavement   (ii)Sub Grade

(iii)Sub base   (iv)Base

f. In the initial stage of construction which type of pavement is cheap

(i)Flexible   (ii)Rigid

(iii)Composite   (iv)WBM

g. The number of factors considered for flexible pavement is

(i)One   (ii)Two

(iii)Four   (iv)Five

h. The presence of moisture content causes

(i)Swelling   (ii)Shrinkage

(iii) Alternate swelling and shrinkage   (iv) Frost

i. A bridge culvert is to be constructed across a proposed lined canal. The afflux at this site for a contracted canal width can be computed by

(i)Unwin's formula   (ii)Broad-crested weir formula

(iii)Orifice formula   (iv) Molesworth formula

j. Calculate the economic length of one span for RCC Slab Bridge if the total height of abutment or pier from the bottom of its foundation to its top is 6m.

(i)6m   (ii)4m

(iii)9m   (iv)3m

PART – B: (Short Answer Questions)   (2 x 5 = 10 Marks)

Q.2. Answer *ALL* questions

a. When are vertical curves provided?

b. Give the reasons for providing curves on roads?

c. Specify the reason for finding the flash point ?

d. Describe CBR test?

e. What are the factors affecting site selection of bridge?

PART – C: (Long Answer Questions)   (6 x 5 = 30 Marks)

Answer *ANY FIVE* questions   Marks

3.   Calculate the stopping sight distance(SSD) for a decending gradient of -8% at a speed of 70kmph.Assume a reaction time of 0.8sec and a coefficient of friction 0.27. Also calculate crossing site distance.   (6)

4.   What are the factors on which the stopping distance depends? Explain with suitable diagram?   (6)

5.   Mention various tests on aggregate and explain any four of them?   (6)

6.   What are the different causes of road accidents?   (6)

7.   Explain IRC method of pavement design?   (6)

8.   Describe various factors affecting flexible pavement design?   (6)

9.   Explain about spread foundation and piles foundation?   (6)

10. What are piers in bridges and explain various types of bridge piers?   (6)

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