

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, December 2020

Programme Name: B. Tech Civil Engineering
Course Name : Transportation Engineering
Course Code : CIVL3022
Nos. of page(s) : 02

Semester : V
Time : 03 hrs
Max. Marks : 100

SECTION A

1. Each Question carries 5 Marks
2. Instruction: Complete the statement / Select the correct answer(s)

S. No.		Marks	CO
Q 1	The four main stages of highway route alignment engineering surveys are _____, _____, _____ and _____.	5	CO1
Q 2	Four important cross-sectional elements of a road are _____, _____, _____ and _____.	5	CO2
Q 3	Four prime objectives of traffic engineering are _____, _____, _____ and _____ movement of traffic.	5	CO2
Q 4	Five equipment used for hot mix construction of roads are _____, _____, _____, _____ and _____.	5	CO3
Q 5	The five types of defects occurring in flexible pavements are _____, _____, _____, _____ and _____.	5	CO3
Q6	Five traffic-related factors as a part of general concepts of Flexible pavements are _____, _____, _____, _____ and _____.	5	CO4

SECTION B

1. Each question carries 10 marks.
2. Instruction: Write short / brief notes and draw diagrams where necessary.

Q 7	Briefly explain characteristics of major types of urban road patterns in India along with one example of the each.	10	CO1
Q 8	Determine the safe stopping distance to avoid head-on collision of two cars A and B approaching towards each other at speeds of 75km/hr and 80 km/hr respectively. Assume a reaction time 2.5 seconds, coefficient of friction 0.36 and a brake efficiency of 75% and 60% respectively for car A and B.	10	CO2
Q 9	Discuss various techniques through which the spot-speed survey data can be presented. List different percentile speeds and their significance.	10	CO2

Q 10	Explain the importance of highway maintenance. Discuss the concept of life cycle cost and its application to the decision of choice of pavement.	10	CO3
Q 11	Differentiate between the important design concepts for both flexible pavements and Rigid pavements. <u>OR</u> With the help of suitable diagram, explain the relative critical location of wheel load application on the rigid pavement slab.	10	CO4
SECTION-C			
1. Each question carries 20 marks 2. Instruction: Write detailed answers and draw diagrams, where necessary.			
Q 12	Explain in detail the various types of joints in rigid pavements. Interpret the reasons, which makes it necessary to provide joints in rigid pavement. <u>OR</u> Write notes on following: A. EWLF and Fourth power law B. Flexible pavement and description of its layers with diagram.	20	CO4