

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Sixth Semester B.Tech Degree (S, FE) Examination May 2023 (2015 Scheme)



Course Code: CE366

Course Name: TRAFFIC ENGINEERING AND MANAGEMENT

Max. Marks: 100

Duration: 3 Hours

PART A*Answer any two full questions, each carries 15 marks.*

- | | | Marks |
|---|--|-------|
| 1 | a) Explain in detail about various ITS user services. | (8) |
| | b) Discuss in detail about various traffic management techniques. | (7) |
| 2 | a) Enumerate the regulations concerning the driver rules of road enforcement. | (8) |
| | b) What are conflict points? Explain with neat sketches the number of conflict points at cross roads of a both two way intersection. | (7) |
| 3 | a) Explain the objects and scope of traffic engineering. | (5) |
| | b) Explain in detail about Area Traffic Control. | (5) |
| | c) Explain salient features of Motor Vehicle Act. | (5) |

PART B*Answer any two full questions, each carries 15 marks.*

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| 4 | a) Explain briefly various design factors that are to be considered in rotary intersection design. | (8) |
| | b) In a right angled intersection flow values in phase 1 is 1000 vph and 900 vph in WE and EW direction respectively. In the second phase, the flow values are 500 vph and 600 vph is SN and NS direction respectively. The lost time and yellow time for the first phase is 2.5 and 3 seconds respectively. For the second phase the lost time and yellow time are 3.5 and 4 seconds respectively. If the cycle time is 120 seconds, find the green time allocated for two phases. | (7) |
| 5 | a) Define LOS according to Highway Capacity Manual. Explain various LOS for an urban road. | (8) |
| | b) Explain with sketches various types of grade separated interchanges. | (7) |
| 6 | a) Discuss briefly the factors affecting the practical capacity of a road. | (4) |
| | b) Explain in detail the major six steps involved in traffic signal design. | (6) |
| | c) Describe various mandatory signs with neat sketches. | (5) |

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Describe the assumptions in Lighthill and Whitham's theory. (4)
b) Explain various measures that may be taken to prevent accidents. (8)
c) Explain car following theory in detail. (8)
- 8 a) It is observed that on an average a vehicle driver drives 5000 km during the course of a year. The probability of having an accident is 100 per 200 million vehicles- kilometres. What is the probability of a driver having at least 2 accidents during his driving career extending to 25 years according to Poisson's distribution? (10)
b) List out the assumptions in Queuing theory. (5)
c) Describe the influence of weather on road accidents. (5)
- 9 a) Explain the fundamental diagram for traffic flow and derive the expression for maximum flow. (12)
b) Explain various methods of collection of accident data. (8)
