

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SIXTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MAY 2019

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

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|---|----|---|------|
| 1 | a) | Explain the techniques of travel demand management. | (10) |
| | | b) Explain the various measures for traffic calming. | (5) |
| 2 | a) | Define tidal flow operation. | (3) |
| | b) | Explain the methods of implementing tidal flow operation. | (2) |
| | c) | Explain the various applications of ITS. | (10) |
| 3 | a) | Explain the various regulations concerning the driver. | (10) |
| | b) | Write short notes on Motor vehicle Act. | (5) |

PART B

Answer any two full questions, each carries 15 marks.

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|---|----|---|------|
| 4 | a) | Define basic capacity, possible capacity and practical capacity. | (5) |
| | b) | With neat sketches illustrate the concept of LOS. | (10) |
| 5 | a) | List the factors that influence the capacity of signalised intersection. | (10) |
| | b) | Explain the procedure for computation of capacity of rotary intersection using Wardrops formula. | (5) |
| 6 | a) | A three-phase traffic signal is to be installed at a right angled crossing of two city streets. The site is average and the approaches are 12m wide between kerbs. The approaches are straight and level and parking is prohibited on them. One of the phases is to be pedestrian only phase occurring at the end of each cycle. Starting delay maybe taken as 2seconds. An all-red period of 4seconds is to be provided after each vehicle phase to allow clearance of right turning vehicles left over in the crossing. The design hour traffic volumes in PCU/hour are given in the following time | (10) |

From	N			E			S			W		
To	E	S	W	S	W	N	W	N	E	N	E	S
PCU/hr	40	800	70	60	500	50	60	660	60	70	680	60

Calculate the optimum cycle time for fixed time installation. Sketch the phasing diagram for each phase. Draw a diagram showing the timings for all three aspects of a complete cycle. Make suitable assumptions for amber and pedestrian interval.

- b) Explain the warrants for installation of traffic signals (5)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Explain the roadway factors that influences road accidents. (12)
 b) With neat sketches differentiate between collision and condition diagrams (8)
- 8 a) Describe the measures that can be adopted to prevent accidents (12)
 b) List the assumptions made in simple queuing approach as applied to traffic flow (8)
- 9 a) A toll booth at the entrance to bridge can handle 120 veh/hour, the time to process a vehicle being exponentially distributed. The flow is 90veh/hour with a Poissonian arrival pattern. Determine: (i) the average number of vehicles in the system (ii) the length of the queue (iii) the average time spent by the vehicle in the system (iv) average time spent by the vehicle in the queue. (8)
 b) With neat sketches illustrate the fundamental diagrams of traffic flow. (12)
