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SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FOURTH SEMESTER B.TECH DEGREE EXAMINATION (Regular), JULY 2022

CIVIL ENGINEERING (2020 SCHEME)

Course Code: 20CET206

Course Name: Transportation Engineering

Max. Marks: 100 Duration: 3 Hours

PART A

(Answer all questions. Each question carries 3 marks)

- 1. Draw the typical cross section of a Major District Road (MDR) in Embankment indicating the width of pavement, road way and land.
- 2. Summarize PIEV Theory and its importance.
- 3. Explain how Penetration value of bitumen is arrived at?
- 4. Differentiate between flexible and rigid pavements.
- 5. Define basic capacity, possible capacity and practical capacity.
- 6. Explain the term Traffic volume. What are the objects of carrying out traffic volume studies?
- 7. What is meant by coning of wheels? Why is tilting of rails adopted?
- 8. Differentiate between dry dock and wet dock.
- 9. Illustrate any four factors, which would be kept in view while selecting suitable site for an airport.
- 10. Enumerate the factors controlling taxiway layout.

PART B

(Answer one full question from each module, each question carries 14 marks)

MODULE I

(7)

(7)

- 11. a) Drive the expression for extra widening on horizontal curves.
 - b) Speeds of overtaking and overtaken vehicles are 80 kmph and 50 kmph respectively on a two-way traffic road. The average acceleration during overtaking may be assumed as, a=0.99m/s². Reaction time of the driver is 2.5s. (7) Calculate the safe overtaking sight distance and mini length of overtaking zone. Draw a sketch of the zone and mark the positions of sign posts.

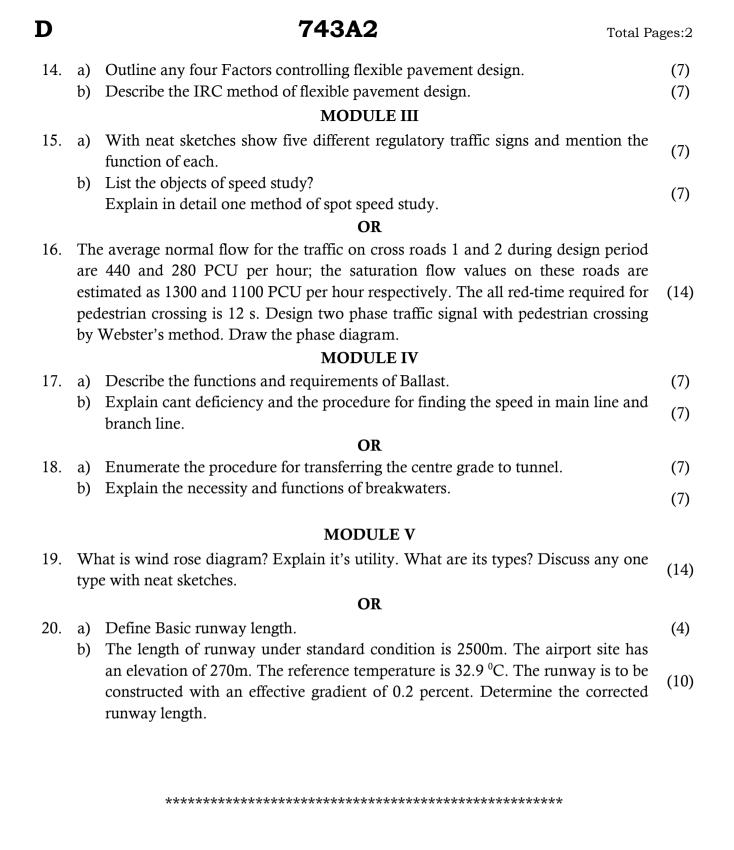
OR

- 12. a) List out the necessity and requirements of a horizontal transition curve.
 - b) In a road with horizontal curve with radius is 190 m, design speed is 80kmph. Design the superelevation and allowable speed. (7)

MODULE II

- 13. a) Define CBR. Enumerate the test procedure in the laboratory. How are the results of the test obtained and interpreted? (10)
 - b) Explain the desirable properties of aggregates used for pavement construction. (4)

OR



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