



R20 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech V Semester Supplementary Examinations, June/July 2023

**AUTOMOBILE ENGINEERING**

(Professional Elective-1)

(Mechanical Engineering)

Subject code: 3E5CA

Maximum Marks: 70

Date:06.07.2023 Duration: 3 hours

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 What is a carburetor? Mention its function.
- 2 List the use of oil ring in IC engine.
- 3 How are batteries rated?
- 4 Write about the current-voltage regulator.
- 5 Give the use of pressure plate in a clutch.
- 6 What is the function of differential in an automobile?
- 7 Define camber.
- 8 Mention the function of wheel cylinder in a brake system.
- 9 What is a hybrid vehicle?
- 10 Define bio-fuel with any one example.

Part-B

Answer All the following questions.

(10MX 5=50Marks)

- 11 Describe the construction of an automobile with a neat layout. (10 marks)  
OR
- 12 With neat sketches explain MPFI and CRDI system of fuel injection. Highlight the major differences between the two. (10 marks)
- 13 Describe the capacitive discharge ignition system with a neat sketch. Mention its merits. (10 marks)  
OR
- 14 Explain about horn, wiper, fuel gauge and engine temperature indicator. (10 marks)
- 15 Explain the functioning of rigid axle suspension system with a neat sketch. Add a note on shock absorber. (10 marks)  
OR
- 16 (a) Describe the requirements of a clutch. (4 marks)  
(b) Sketch and explain the working of a torque tube type propeller shaft. (6 marks)
- 17 (a) Compare the features of hydraulic and pneumatic brake systems. (4 marks)  
(b) Explain the working of a Master cylinder assembly in brake system. (6 marks)  
OR
- 18 Describe the steering geometry parameters in an automobile. (10 marks)
- 19 Give an account of emissions, pollution control techniques and national pollution standards. (10 marks)  
OR
- 20 Discuss the merits, performance and emission characteristics of ethanol as a fuel for IC engines. (10 marks)