QP Code: RD21BTECH333 | Reg. No | | | | | | | | | | | AY 21

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Fifth Semester Regular) Examinations, December – 2023

21BMEPE35001 – Automobile Engineering

(Mechanical)

Time: 3 hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. How to identify, whether the vehicle is front wheel drive or rear wheel drive.	CO2	K3
b. Explain the reasons of using internal expanding brake preferred in automobile.	CO2	K2
c. What type of gear is preferred in the high speed transmission and why?	CO2	K3
d. Explain Under-steering and Over-steering.	CO3	K2
e. Describe the functions of an ignition system.	CO2	K2

PART – B **(15 x 4 = 60 Marks)**

Answer ***ALL*** questions	Marks	CO #	Blooms Level
2. a. Describe Motor Vehicle Act.	8	CO1	K2
b. Analyse the impact of brake fading.	7	CO2	K3
(OR)			
c. Describe Traction, Tractive effort, Resistance on automobile	8	CO1	K2
d. Illustrate hydraulic brake bleeding.	7	CO2	K2
3.a. Describe Overdrive and explain its advantages.	10	CO3	K2
b. Explain the principle of synchromesh gear box.	5	CO2	K2
(OR)			
c. Explain the working and construction of Constant mesh gear box.	10	CO3	K2
d. Explain the function of propeller shaft.	5	CO2	K2
4.a. Explain the necessity of steering in an automobile and describe briefly about power steering with neat sketch.	10	CO3	K3
b. Explain the requirements and functions of steering system.	5	CO3	K3
(OR)			
c. A vehicle has a wheel base of 2.8 m, wheel track is 1.22m and pivot centers are 1.065 m apart. Calculate the correct angle of outside lock and turning circle radius of the outer front and inner rear wheels, when the angle of inside lock is 40^{O}.	10	CO3	K3
d. Describe Spark Advance Mechanism.	5	CO3	K3

5.a.	What is hybrid drives? Explain the types with diagrams.	10	CO4	K3
b.	Explain Parallel hybrid.	5	CO4	K2
	(OR)			
c.	Illustrate fuel cell and its working principle	10	CO3	K2
d.	Explain various types of emissions.	5	CO3	K3

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