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Code No. : 16136 G

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. VI-Semester Main & Backlog Examinations, June-2022

Introduction to Automobile Engineering (OE-IV)

Max. Marks: 60

Time: 3 hours

Note: Answer all questions from Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	What are the functions of cylinder liners?	2	1	1	1
2.	Distinguish between S.I and C.I engines.	2	1	1	1
3.	List the limitations of carburetors when compare to fuel injection system.	2	2	2	2
4.	What are the limitations of air-cooling system?	2	1	2	2
5.	List the functions of suspension system.	2	1	3	1
6.	Explain the need of wheel alignment.	2	2	3	2
7.	List the components of transmission system in sequence.	2	1	4	1
8.	Enlist the advantages of ABS.	2	1	4	1
9.	List out the different types of wheels used in automobiles.	2	1	5	1
10.	What is 3-way catalytic convertor?	2	1	5	2
Part-B (5 × 8 = 40 Marks)					
11. a)	Describe how power is transmitted from engine to wheels of a motor vehicle. Explain the purpose of each unit.	5	2	1	1
b)	Why a carburetor is needed in petrol engine? Why not in diesel engine?	3	3	1	1
12. a)	Differentiate between wet sump and dry sump lubrication system.	4	2	2	1
b)	With a suitable sketch explain the working of MPFI system.	4	2	2	1
13. a)	What is the difference between conventional suspension system and independent suspension system?	3	3	3	1
b)	Explain the terms Castor, Camber, Steering axis inclination, toe in and toe out. What are the effects of each on the steering characteristics of a vehicle?	5	2	3	1
14. a)	Discuss the advantages of a constant mesh gear box over the sliding mesh type.	4	3	4	1
b)	How brakes are classified? Compare disc brakes with conventional drum type brakes.	4	3	4	2
15. a)	Describe in detail constructional features of the tubes and tubeless tyres for automotive use. Discuss also their relative merits and demerits.	5	4	5	1
b)	Enlist the Bharat VI emission norms.	3	2	5	1
16. a)	Explain the working principle of four stroke S.I engine with neat sketch.	4	1	1	1
b)	Compare battery ignition system with magneto ignition system.	4	4	2	1
17.	Answer any <i>two</i> of the following:				
a)	With the help of neat sketch explain the working principle of Rack and Pinion type steering mechanism.	4	3	3	1
b)	With a neat sketch explain the working principle of hydraulic brake.	4	3	4	1
c)	What is a catalytic convertor? Explain with a neat sketch.	4	2	5	2

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	25%
ii)	Blooms Taxonomy Level – 2	36.25%
iii)	Blooms Taxonomy Level – 3 & 4	38.75%
