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Code No. : 16118 (F)

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**B.E. (CBCS) VI-Semester Main Examinations, January-2021****Introduction to Automobile Engineering**

(Open Elective-V)

Time: 2 hours

Max. Marks: 60

• Note: Answer any **NINE** questions from **Part-A** and any **THREE** from **Part-B****Part-A (9 × 2 = 18 Marks)**

Q. No.	Stem of the question	M	L	CO	PO
1.	What are the functions of engine inlet and exhaust manifolds?	2	1	1	1
2.	Explain the functions of cylinder liners.	2	2	1	1
3.	Explain the functions of thermostat in the engine cooling system.	2	2	2	1
4.	State the primary and secondary objectives of lubrication?	2	1	2	1
5.	What do you understand from wheel alignment?	2	1	3	1
6.	What are the requirements of suspension system?	2	1	3	1
7.	What is the necessity of a differential in an automobile?	2	1	4	1
8.	List five factors that contribute to brake effectiveness?	2	2	4	1
9.	What is alloy wheels?	2	1	5	3
10.	List the causes of engine over heating	2	2	5	1
11.	Why a flywheel is necessary in multi cylinder engine?	2	2	1	1
12.	State the main functions carburetor	2	1	2	1
Part-B (3 × 14 = 42 Marks)					
13. a)	How are the automobiles classified? Explain in detail by giving examples.	7	3	1	1
b)	Describe how power is transmitted from engine to wheels of an Automobile. Explain the purpose of each unit.	7	2	1	1
14. a)	With a neat sketch explain the functioning of CRDI system	7	2	2	5
b)	Differentiate between wet sump and dry sump lubrication system.	7	2	2	1
15. a)	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?	8	4	3	1
b)	What are the advantages and disadvantages of independent suspension system?	6	2	3	1
16. a)	What are the functions of the propeller shaft and universal joint in an automobile?	7	2	4	1
b)	How brakes are classified? Compare disc brakes with conventional drum type brakes.	7	3	4	5

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17. a)	Describe in detail constructional features of the tubes and tubeless tyres for automotive use. Discuss also their relative merits and demerits.	7	3	5	1
b)	How does an automobile contribute towards pollution of the atmosphere? Discuss various methods to reduce the emissions of pollutants in exhaust gases.	7	3	5	7
18. a)	Why a carburetor is needed in petrol engine? Why not in diesel engines?	6	2	1	1
b)	What are the characteristics which are considered while selecting a particular lubricant for an automobile engine? Discuss in details.	8	3	2	1
19.	Answer any <i>two</i> of the following:				
a)	What is the difference between conventional suspension system and independent suspension system?	7	2	3	1
b)	Describe the principle of synchromesh gearbox with neat sketch.	7	3	4	1
c)	List out the latest Bharat emission norms and explain.	7	2	5	7

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

S. No.	Criteria for questions	Percentage
1	Fundamental knowledge (Level-1 & 2)	60
2	Knowledge on application and analysis (Level-3 & 4)	40
3	*Critical thinking and ability to design (Level-5 & 6) (*wherever applicable)	0
