

B.E. (Mechanical Engineering) Model Curriculum Semester-VII
OEC-4011 - Automobile Engineering

P. Pages : 2

Time : Three Hours



GUG/W/24/14268

Max. Marks : 80

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- Notes :
1. All questions carry equal marks.
 2. Solve: Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6, Q. 7 or Q. 8, Q. 9 or Q. 10.
 3. Due credit will be given to neatness and adequate dimensions.
 4. Assume suitable data wherever necessary.
 5. Diagrams and Chemical equation should be given wherever necessary.
 6. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Explain briefly the various types of chassis frame with the help of suitable diagram. Enlist the various components mounted on the chassis. 8
- b) Draw and explain the various classification of chassis. 8

OR

2. a) What's the main function of the air bag? Material of Airbag? Working of air bag. 8
- b) What are the safety measures in automobile industry? What is the most important safety factor in any vehicle? What are the 5 Most Important Safety Features For Cars? 8
3. a) What is the function of a clutch? Illustrate the construction and working cone clutch with neat sketch. 8
- b) Demonstrate with neat sketch construction and operation of a sliding mesh gear box. 8

OR

4. a) What is the use of overdrive in an automobile? Explain its working along with advantages. 8
- b) Explain 2WD and 4WD? Explain the construction and working of transfer case gear box. 8
5. a) Discuss in detail different methods of supporting live rear axle shafts. Describe also the advantages and disadvantages of each. 8
- b) Explain the necessity of differential in an automobile. Discuss in detail construction and operation of a differential. 8

OR

6. a) Explain with neat sketch the construction and operation vacuum servo brake system. 8
- b) Explain construction and working of fixed and sliding caliper type of disc brake with neat sketch. 8

7. a) Explain the following terms: 8
i) Camber ii) Castor
iii) Toe-in iv) Toe-out
v) King pin inclination
What are the effects of each on the life of tyres?

- b) Explain with neat sketch Recirculating ball type steering gear. 8

OR

8. a) What is independent suspension system? Explain its type and state working of any one of them with neat sketch. 8

- b) What are the important causes of tyre wear? What are their effects on tyre tread wear? How can they be controlled. 8

9. a) Explain the Battery Ignition system used in automobile with neat sketch. State its salient features. Also define battery capacity. 8

- b) Explain with neat sketch spark plug and ignition coil. 8

OR

10. a) Explain with neat different starting motor switches. 8

- b) Explain briefly the following. 8

- i) Standard Bendix drive.
ii) Over running clutch type starting drive.
