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Paper Id: | 4 | 0 | 3 | 7 | **Roll No:** | | | | | | | | | | |

B.TECH.
(SEM VII) THEORY EXAMINATION 2017-18
AUTOMOBILE ENGINEERING

Time: 3 Hours   *Total Marks: 100*

Note: **1.**   Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   Attempt *all* questions in brief.   2 x10 = 20

a. What is the purpose of the stator in a torque convertor?
b. Define tractive effort. What are the different kinds of resistances encountered by an automobile?
c. What are main advantages of air suspension?
d. What is clutch and why it is required?
e. Write main requirement of an injector nozzle.
f. What is function of governor in automobile?
g. What is the cause of excessive oil consumption in automobile?
h. What do you understand by tuning up?
i. What is function of carburetor?

SECTION B

2.   Attempt any *three* of the following: 10 x 3 = 30

a. Define various suspension systems. What are the advantages of independent suspension system over rigid axle suspension system?
b. Sketch and explain the layout of an automobile chassis marking the important parts.
c. Describe the formula for torque transmitted by single plate clutch and explain it with help of sketch.
d. What are advantages of synchromesh gear box over constant mesh gear box? Explain synchromesh gear working with suitable sketch.
e. State the mechanism of formation of carbon monoxide (CO) and hydrocarbons (HC)?

SECTION C

3.   Attempt any *one* part of the following: 10 x 1 = 10

a) Explain constant mesh gear box with neat sketch. What is double declutching?

b) Enumerate different type of carburetor and explain the working of a Zenith carburetor.

4.   Attempt any *one* part of the following: 10 x 1 = 10

a) Explain the working the of the D.C. generator (dynamo).

b) Explain the working the of battery and magneto ignition systems.

5.   Attempt any *one* part of the following: 10 x 1 = 10

a) What are the causes and remedies of tyre wear and also discuss the factor affecting the tyre mileage.

b) Give the arrangements of brakes in different vehicles. Explain these briefly.

6. **Attempt any *one* part of the following:**   **10 x 1 = 10**

   a) Explain the working of a fuel pump employed commonly for pressure feed system.

   b) Draw a sketch describing the steering linkage for any Indian car.

7. **Attempt any *one* part of the following:**   **10 x 1 = 10**

   a) What main emissions in automobiles? Explain various methods by which S.I. engine emissions can control.

   b) Differentiate between preventive maintenance, break down maintenance and over-hauling.