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Total No. of Questions: 09

Total No. of Pages: 02

B. Tech. (AE) (Sem. 6)
COMPUTER AIDED AUTOMOTIVE DESIGN
Subject Code: BTAE-601
Paper ID: A2380

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. Section A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. Section B contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. Section C contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION A

1.
 - a) What arc design variables for automotive?
 - b) List some specification according to which vehicles arc selected.
 - c) What is the role of Sprocket for chain?
 - d) Name the types of piston rings.
 - e) What is function of steering systems?
 - f) What types of stresses arc generated in front axles?
 - g) Draw line diagram of value gear mechanism.
 - h) Define Gear ration.
 - i) Write note on rocker arm.
 - j) What is the usual gear ratio for low gear?

SECTION B

2. With the help of curves explain the engine torque.
3. Describe design of bearing housing.
4. Calculate gear ratio for forward motion for three speed gear box.
5. A four-stroke petrol engine work on a mean effective pressure of 5 bar and engine speed of 1250 rpm. Find the indicated power developed by the engine if the bore is 100mm and stroke is 150mm.
6. Discuss in detail about Optimizing sizes of steering linkages.

SECTION C

7. Describe the effect of gear ratio on acceleration by considering appropriate example.
8. Write note on: i) Rear axle ratio, ii) Valve gear mechanism
9. A chain drive is used for reduction of speed from 240 rpm to 120 rpm. The number of teeth on the driving sprocket is 20. Find the number of teeth on the driven sprocket. If the pitch circle diameter of the driven sprocket is 600 mm and Centre to Centre distance between the two sprockets is 800 mm, determine the pitch and length of the chain.