

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 4022

Roll No.

--	--	--	--	--	--	--	--	--	--

B.Tech.

SEVENTH SEMESTER EXAMINATION, 2006-07

AUTOMOBILE ENGINEERING

Time : 3 Hours

Total Marks : 100

- Note :**
- (i) Attempt ALL questions.
 - (ii) All questions carry equal marks.
 - (iii) In case of numerical problems assume data wherever not provided.
 - (iv) Be precise in your answer.

1. Attempt *any two* parts of the following : (10x2=20)
- (a) Draw the layout of four wheeler vehicle, and explain how front wheel drive differs from rear wheel drive ?
 - (b) Describe different types of pistons. How are the two stroke piston differs from 4 stroke pistons of an vehicle ?
 - (c) What do you know about an Epicyclic gear box ? How the over drive can be obtained in an epicyclic gear box, explain with neat sketch ?

2. Attempt *any two* parts of the following : (10x2=20)

- (a) What type of clutch is used in case of motor cycles ? Explain its construction and working in details.
- (b) Explain the principal of Ackerman steering gear. A motor car has a wheel base of 2.743 meter and pivot centre of 1.064 meter. The front and rear wheel track is 1.217 meter. Calculate the correct angle of outside lock and turning circle radius of the outer front and inner rear wheels when the angle of inside lock is 40° .
- (c) (i) What is function of universal joint in transmission system ? Name the places where it is used in cars.
(ii) What do you mean by directional stability of a automobile ? How it is obtained in an Automobile ?

3. Attempt *any two* parts of the following : (10x2=20)

- (a) What do you know about braking efficiency in an Automobile ? Derive the relation of weight transfer when brakes are applied to all the four wheel.
- (b) Draw layout of an four wheeler automobile chassis. What design features are to be considered in making a chassis frame ?
- (c) What is advantage of Air brake system over other brake system ? Explain the working of Air brake system used in heavy vehicles.

4. Attempt *any four* parts of the following : (5×4=20)

- (a) What are different types of motors are used in an automobiles ? Explain the working of bendix drive.
- (b) Draw the turning light circuit for an automobile.
- (c) What is function of generator regulator in case of electrical system of Automobile ?
- (d) Name various types of carburettors. What is speciality with zenith carburettor ?
- (e) Why it is essential to use ignition system in petrol engine and fuel injection in diesel engine ?
- (f) Draw a layout of fuel supply system in case of Diesel engine.

5. Attempt *any two* parts of the following : (10×2=20)

- (a) What is need of cooling system in an automobile engines ? What type of cooling system is used in case of four wheeler Indian vehicle ?
- (b) What is need of lubrication in an Automobile ? Explain the working of a lubrication system used in Automobile engine by neat sketch only.
- (c) What do you know about break down maintenance ? If a petrol vehicle stops on road explain the possibility of stopping the vehicle in sequence.