2008-PUNJAB TECHNICAL UNIVERSITY

B.E / B.TECH DEGREE EXAMINATION

MECHANICAL ENGINEERING (AUTOMOBILE ENGINEERING)

TIME-3HOUR
MARKS-100

ANSWER ALL QUESTIONS.

PART-A [1082=20 MARKS]

1. What is meant by air pollution ? What are the pollutants emitted by an automobile?

2. Draw a layout of transmission system and illustrate the parts.

3. Write down the firing order of a 4 cylinder and 6 cylinder engine.

4. What is the purpose of cut-out relay?

5. What is the function of a car's generator?

6. What do you mean by fluid flywheel?

7. List out the types of front axle.

8. What is the function of an synchrinizer in a gearbox?

9. Define camber , Castor and toe in with sketches.

10. What is meant by a fuel cell and how it works?

PART-B [5*16=80 MARKS]

11. (i) List out the various parts of a typical petrol engine

(ii) Explain briefly the construction of an S.I engine.

12 (a) (i) What are the functions of a carburetor?

(ii) Sketch an explain the construction and operation of a simple carburetor

OR

(b) (i) Draw a typical ignition coil and name the parts

(ii) Explain the operation of battery coil ignition with a circuit diagram.

13 (a)(i) What is meant by clutch ? List out the requirements .

(ii) Explain the construction and operation of a typical single plate coil spring clutch

OR

(i) What is meant by a fluid coupling and torque converter?

(ii) Explain th operation of sliding mesh gearbox and deduce the gear ratios.

14 (a) (i) What are the different types of live rear axles and illustrate them?

(ii) Explain the principle and working of a differential with neat sketch

OR

(b) (i) What are the different types of steering gears used in an automobile?

(ii) With a neat diagram explain the construction and operation of a shock absorber.

15 (a) (i) Differentiate cross-ply and radial ply tyres.

(ii) Explain the construction and operation of hydraulic braking system with a neat sketch

OR

(b) (i) Describe the salient features of using LPG as an alternate fuel

(ii) Explain why hydrogen is considerd as the most favorable fuel for future.

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