

DEPARTMENTAL EXAMINATION OF IAS/HAS OFFICERS OF
HIMACHAL PRADESH
October, 2012

Paper: 12

Motor Mechanism and Driving

Time: 1.30 hours

Maximum Marks = 50

Note:-

1. Candidate may answer the question in Hindi or English.
2. Attempt all questions from Part A and any five from Part-B.
3. Bar Act is allowed.

PART-A

Q.No.1 Explain the functions of any five in the motor vehicle. (1X5=5)

- a) Thermostat
- b) Radiator
- c) Water body
- d) Clutch
- e) Gear box
- f) Turbocharger
- g) Speedometer
- h) Fuel injection pump.

Q.No. 2 Attempt any five question (2X5=10)

- a) Explain briefly function of Storage battery.
- b) What are the functions of a shackle pin?
- c) State four advantages of power steering used in an automobile.
- d) Explain the function of Engine foundation.
- e) What is the 'Compression ratio' of an engine?
- f) Why 'Multivalve' Engines are more fuel efficient than 'Two-Valves/Cylinder' ones?
- g) Why the four stroke engines do not require 2T oil unlike the two stroke engines?
- h) Define Turning Radius.

Q.No.3 Answer any ten questions by selecting the correct choice. (1X10=10)

1. The size of an engine cylinder is referred to in terms of its
 - a. Diameter and bore
 - b. Bore and length
 - c. Bore and stroke
2. The pump part that rotates and causes water circulation between the radiator and engine is called
 - a. Impeller
 - b. Fan
 - c. Bypass

3. The brake shoes are curved to conform to the inner diameter of the
 - a. Tyre
 - b. Wheel
 - c. Pedal
 - d. Brake drum
4. In an operating engine, the hottest part of the piston is the
 - a. Head
 - b. Ring grooves
 - c. Skirt
 - d. Pin bosses
5. When preparing electrolyte, it is important to remember that
 - a. Acid and water should be poured together
 - b. Water should be poured into acid
 - c. Acid should be poured into water
6. The device for smoothing out the power impulses from the engine is called the
 - a. Flywheel
 - b. Camshaft
 - c. Clutch
7. Aluminium alloy pistons are preferred because
 - a. They are good absorbers of shock
 - b. They are having less weight
 - c. They have good water resistance
 - d. They are very strong in tension
8. Piston compression rings are manufactured by
 - a. Aluminium
 - b. Cast iron
 - c. Steel
 - d. Bronze
9. The rotating effect of the connecting rod on the connecting rod bearing produces
 - a. Pressure load
 - b. Inertia load
 - c. Centrifugal load
10. As a rule when comparing the front and rear wheel cylinder pistons, it will be found that the pistons in the front wheel cylinders are
 - a. The same size
 - b. Larger in diameter
 - c. Smaller in diameter
11. The ratio of the cylinder volume at BDC and the clearance volume is called
 - a. Clearance ratio
 - b. Volumetric ratio
 - c. Compression ratio
12. In normal operation the part of the exhaust valve that gets the hottest is
 - a. Face
 - b. Middle of Stem
 - c. Centre of head
 - d. Edge of margin

PART-B

Q.No. 4. As per provision of the Motor Vehicle Act, define any five of the following:-

- a. Transport Vehicle. (1X5)
- b. Educational Institution Bus.
- c. Maxi cab.
- d. Contract carriage.
- e. Articulated vehicle.
- f. Gross Vehicle weight.
- g. Certificate of Registration

Q.No.5. What is the role of any two of the following authorities? (2.5X 2=5)

- a. State Transport Appellate Tribunal
- b. Motor Accident Claim Tribunal
- c. Regional Transport Authority.

Q.No.6 What is procedure envisaged under Motor Vehicle Act 1988 for regulating Contract carriage? (5)

Q.No. 7 Explain law relating to licensing and regulation of establishments for imparting instructions in driving of motor vehicles. Under what Circumstances Driving License can be suspended and cancelled. (5)

Q.No.8. Why insurance of Motor vehicle is necessary? Explain briefly relevant Provisions with regard to insurance of motor vehicle contained in Motor Vehicles Act, 1988. (5)

Q.No.9 Explain law relating to removal and disposal of abandoned or left unattended Vehicle. (5)

Q.No.10 What are the essential documents/tools required to be kept always with vehicle during operation? (5)