

H.P.BOARD OF DEPARTMENTAL EXAMINATION  
DEPARTMENTAL EXAMINATION OF IAS/HAS OFFICERS OF  
HIMACHAL PRADESH  
October, 2015

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. BarzAct is allowed.

PART-A

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

- a) Head gasket
- b) Water body
- c) Battery
- d) Clutch
- e) Mounting pin
- f) Fuel gauge
- g) Ignition Switch
- h) Axle shaft

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

- a) Explain the function of Engine foundation.
- b) State any four advantages of independent suspension system over rigid axle suspension system.
- c) Explain briefly working of engine cooling system.
- d) Why the four stroke engines do not require 2T oil unlike the two stroke engines?
- e) Explain the functions of leaf springs fitted in an automobile.
- f) Name the different pollutants emitted by the vehicle which are harmful to the human beings.
- g) Define Turning Radius.
- h) Name any five aggregates out of following which are related to the Steering system of vehicles.
  1. Tie rod end.
  2. Exhaust pipe.
  3. Hub.
  4. Knuckle arm.
  5. Steering wheel.
  6. Drop arm.
  7. Shekel Pin.
  8. Propeller Shaft.
  9. U.J.Cross.
  10. Worm Gear.

**Q.No.3** Answer any ten questions by selecting the correct choice.

**(1X10=10)**

1. The brake shoes are curved to conform to the inner diameter of the
  - a. Pedal
  - b. Tyre
  - c. Brake drum
  - d. Wheel
  
2. The motion of the cam is transferred to the valves through
  - a. Pistons
  - b. Rocker arms
  - c. Camshaft pulley
  - d. Valve stems
  
3. The size of an engine cylinder is referred to in terms of its
  - a. Bore and length
  - b. Bore and stroke
  - c. Diameter and bore
  
4. The pump part that rotates and causes water circulation between the radiator and engine is called
  - a. Bypass
  - b. Fan
  - c. Impeller
  
5. When preparing electrolyte, it is important to remember that
  - a. Water should be poured into acid
  - b. Acid should be poured into water
  - c. Acid and water should be poured together
  
6. The device for smoothing out the power impulses from the engine is called the
  - a. Clutch
  - b. Flywheel
  - c. Camshaft
  
7. The operation of removing trapped air from the hydraulic braking system is known as
  - a. Tapping
  - b. Trapping
  - c. Bleeding
  - d. Cleaning
  
8. Which is not the common component between a petrol and diesel engine?
  - a. Crank shaft
  - b. Connecting rod
  - c. Ignition coil
  - d. Cam shaft

9. Which part of the automobile tyre is subjected to greatest flexing action?
- Bead
  - Shoulder
  - Side wall
  - Tread
10. The main function of intake manifold is that it
- distributes intake air equally to the cylinders
  - promotes the mixture of air and fuel
  - reduces intake noise
  - cools the intake air to a suitable temperature
11. The painting of automobiles is done to
- retain the characteristics of steel for long
  - improve its external appearance
  - prevent rust from growing on the body
  - all of these
12. It is necessary to maintain the valve clearance as they
- reduce the resistance to sliding that occurs between the cam and the tappet
  - make the crankshaft turn smoothly
  - allow the lengthening of the valves owing to the heat of the combustion
  - increase the speed at which the valves move up and down

### PART-B

**Q.No. 4.** As per provision of the Motor Vehicle Act, define any five of the following:-  
(1X5)

- HTV,MMV & LMV
- Route.
- Certificate of Registration
- Stage carriage
- Tourist vehicle.
- Maxi cab.
- Trailer.

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

- Registering & Licensing Authority.
- Motor Accident Claim Tribunal.
- State Transport Appellate Tribunal.

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

**Q.No.7** What are the essential documents/tools required to be kept always with vehicle during operation? (5)

**Q.No. 8** Explain relevant provision in Motor Vehicles Act regarding training schools or establishments for imparting instruction in driving motor vehicles in H.P. ? (5)

**Q.No.9** Why insurance of Motor vehicle is necessary? Explain briefly extent of Liability of the insurer in case of any motor vehicle accident. (5)

**Q.No.10.** Explain law relating to removal and disposal of abandoned or left unattended Vehicle. (5)