

DEPARTMENTAL EXAMINATION OF IAS /HAS OFFICERS OF
HIMACHAL PRADESH
SEPTEMBER 2020

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. Bare acts are allowed.

PART-A

Q.No.1 Explain the functions of any five in the motor vehicle. (1x5)

- a) Turbocharger or intercooler
- b) Battery
- c) Ignition Switch
- d) Brakes
- e) Steering wheel
- f) Engine
- g) Propeller Shaft
- h) Diesel Tank

Q.No.2 Attempt any five questions. (2X5)

- a) What are two important advantages of power steering in motor vehicle.
- b) Explain function of Engine foundation.
- c) Explain the function of hand brake
- d) Explain function of shackle pin.
- e) What is the Difference between front and rear wheel drive.
- f) What is difference between diesel engine and petrol engine and electric vehicle
- g) Explain why the radiator is used in engines.
- h) Explain the function of overdrive

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. Bore and length.
 - b. Diameter and bore
 - C. Bore and stroke

2. The operation of removing trapped air from the hydraulic braking system is known as
 - a. Trapping
 - b. Bleeding
 - c. Tapping
 - d. Cleaning
3. In an operating engine, the hottest part of the piston is the
 - a. Head
 - b. Pin bosses
 - c. Ring grooves
 - d. Skirt
4. Engine torque is highest at
 - a. High speed
 - b. Intermediate speed
 - c. Low speed
5. The Pump part that rotates and causes water circulation between the radiator and engine is called
 - a. Impeller
 - b. Fan
 - c. Bypass
6. The opening and closing of a valve is respectively done by
 - a. A cam and a spring
 - b. A spring and a cam
 - c. Gas pressure and cam
 - d. Cylinder vacuum and spring
7. Piston compression rings are manufactured by
 - a. Aluminium
 - b. Cast iron
 - c. Steel
 - d. Bronze
8. The ratio of the cylinder volume at BDC and the clearance volume is called
 - a. Clearance ratio
 - b. Volumetric ratio
 - c. Compression ratio
9. Mixing of water in engine oil leads to
 - a. Milkiness of engine oil
 - b. Engine oil turns thick
 - c. Engine oil turns white
 - d. None of above

10. The painting of automobiles is done to:-
- Prevent rust from growing on the body of vehicle.
 - Improve its external appearance.
 - Retain the characteristic of the steel for longer
11. The device for smoothing out the power impulses from the engine is called
- Flywheel
 - Camshaft
 - Clutch
 - None of above
12. The power actually developed inside the engine cylinder is called:-
- Brake horse Power
 - Frictional Power
 - Indicated horse Power
 - None of above

PART-B

- Q.No.4. As per provision of the Motor Vehicle Act, define any five of the following: - (1X5=5)
- Route.
 - HTV, LMV.
 - Tourist Vehicle.
 - Semi-Trailer.
 - Gross Vehicle weight.
 - Fleet owner,
 - Bus body code.
- Q. No. 5. What is the role of any two of the following authorities? (2.5X2=5)
- Motor Accident claim Tribunal.
 - State Transport Authority.
 - Registering & Licensing Authority.
- Q.No.6. What do you understand by any five of the following :-(1X5=5)
- Modification of route
 - Extension of route.
 - Diversion of route.
 - Curtailment of route.
 - Restoration of route.
 - Interstate agreement
- Q.No.7 under what circumstances Driving License can be suspended and cancelled. (5)

Q. No.8. What are the essential documents/tools required to be kept always with vehicle during operation? (5)

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

Q. No. 10. Why Insurance of vehicle is necessary and what is the effect of Non-Insurance of Motor Vehicle?

Which of the Motor vehicle can be exempted from Insurance and by whom? (5)

XXX