843

October 2016

Time – Three hours *Maximum Marks: 75*

[N.B: (1) Answer any fifteen questions in PART – A and division (A) or division (B) of each question in PART – B.

(2) Each question carries 1 (one) mark in PART – A and 12 (twelve) marks in PART – B.]

PART – A

1. What is the function of crankcase?
2. Name any two types of compression rings.
3. What are the main causes of over cooling?
4. Classify the lubricating oils according to service conditions.
5. Define octane number.
6. Name any four alternate fuels used in automobile engine.
7. State any two defects in simple carburettor.
8. What is CRDI?
9. What is the function of clutch?
10. What is the function of slip joint?
11. What is the function of final drive?
12. What is a non-slip differential?
13. What are the main components of front axle?
14. What is the use of collapsible steering column?
15. What is an antilock brake system?
16. Give any three causes for excessive tyre wear.
17. What is the electrolyte used in an alkaline battery?
18. While aiming head lights, what should be the distance between screen and car?
19. What are evaporative emissions?
20. What is PCV? What purpose does it serve?

PART – B

Marks

21. (A) (i) Compare wet liners with dry liners. 4+8
(ii) Explain the construction and working of overhead valve operating mechanism with a neat sketch and state its merits.

(Or)

(B) (i) How diesel engine combustion chambers are classified? What type of swirl is used in these chambers? 4+8
(ii) With suitable line diagram, explain the construction and working of full pressure lubrication system in an automobile engine.

22. (A) (i) Compare detonation with diesel knock. 4+8
(ii) Explain the working of starting and acceleration circuits of solex carburettor with neat sketches.

(Or)

(B) (i) Compare AC fuel pump and SU fuel pump. 4+8
(ii) With necessary line diagram, explain the construction and working of distributor type fuel injection pump.

23. (A) (i) Draw a layout of rear engine, rear drive system and explain. 4+8
(ii) With a neat sketch, explain the working principle of constant mesh gear box used in automobiles.

(Or)

(B) (i) Compare Hotch kiss drive and torque tube drive. 4+8
(ii) Sketch and explain the construction of semi floating and full floating type rear axle arrangements.

24. (A) (i) Explain briefly air suspension system. 4+8
(ii) What is power steering? Draw the layout of any one type of power steering and explain the working principle.

(Or)

(B) (i) Why stub axles are fitted in front axles? Name the different types of stub axles. 4+8
(ii) Sketch the layout of air brake system used in automobile and explain its working.

25. (A) (i) Explain the various battery rating methods. 4+8
(ii) Explain with a neat sketch, the construction and operation of Bendix inertia starter motor drive mechanism.

(Or)

(B) (i) Draw the layout of electronic ignition system and explain it. 4+8
(ii) Explain in detail about exhaust gas treatment using catalytic converter and EGR.
