

613
October 2015

074

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. Which type of limer is used for water cooled engine?
2. Which valve operating mechanism have become obsolete and why?
3. What is the method of generating air swirl in pre-combustion chamber?
4. What is an oil additive?
5. How can the diesel knock be controlled?
6. Define carburetion.
7. What is CCVTI?
8. Name the different types of injection nozzles used in diesel engines.
9. Name the various resistances to motion.
10. What is the function of universal joints?
11. What is the purpose of a radius rod?
12. What are the various forces acting on the rear axle?
13. What are the types of stub axles?
14. Mention any three causes for hard steering.
15. State the advantages of an air suspension system.
16. Mention any three causes for spongy brake.
17. Name the different battery ratings.
18. Name any three types of starter motor drives.
19. Name the main sources from which pollutants are emitted from petrol engine.
20. What is a catalytic converter?

PART – B

- | | | Marks |
|-----|---|-------|
| 21. | (A) (i) Distinguish between the crank case and the oil pan. | 4 |
| | (ii) Explain in detail the pressurised expansion tank cooling system with a neat sketch and state its merits. | 8 |

[Turn over.....

	(Or)	Marks
(B)	(i) Explain any three methods of expansion control in piston with sketches.	6
	(ii) What is meant by delay period in diesel engine? Explain the variables affecting the delay period.	6
22.	(A) (i) Explain the desirable properties of a good diesel fuel.	4
	(ii) Explain the construction and operation of S.U. electrical fuel pump with a neat sketch.	8
	(Or)	
(B)	(i) Explain with a neat sketch the working of single acting diesel feed pump.	4
	(ii) Explain with the help of a neat sketch the construction and working of a pneumatic governor.	8
23.	(A) (i) Briefly explain the Hotchkiss drive with a neat sketch.	4
	(ii) Explain with necessary sketches, the construction and working of diaphragm clutch.	8
	(Or)	
(B)	(i) What is clutch slip? State the reasons for clutch slip.	4
	(ii) Explain with a neat sketch the construction and operation of differential used in an automobile.	8
24.	(A) (i) Compare radial ply and cross ply tyres.	4
	(ii) Explain the construction and working of any one type of front independent suspension system with a neat sketch and state its merits and demerits.	8
	(Or)	
(B)	(i) Compare disc and drum brakes.	4
	(ii) What is meant by wheel alignment? Explain the terms camber, caster, king pin inclination, toe in and toe out on turns.	8
25.	(A) (i) Draw the circuit diagram of an electric horn and explain about how does the horn works.	4
	(ii) Explain the construction and operation of nickel- alkaline battery. State its merits and demerits.	8
	(Or)	
(B)	(i) With a neat sketch explain vapour recovery system (VRS) in the emission control.	6
	(ii) Explain with a simple diagram about the lighting system of a car.	6