896

Register No.:

April 2019

Time - Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART - A and Q.No. 16 in PART - B are compulsory. Answer any FOUR questions from the remaining in each PART - A and PART - B

(2) Answer division (a) or division (b) of each question in PART - C.

(3) Each question carries 2 marks in PART - A, 3 marks in Part - B and 10 marks in PART - C.

(4) Use of Steam tables are permitted.]

PART - A

1. What are the elements of a condensing plant?
2. Define COP.
3. What is the purpose of using cylinder liner?
4. How are engines classified based on arrangement of valves?
5. State two troubles that occur in lubrication system.
6. What are types of stub axles?
7. State the factors of wheel alignment.
8. Name the tests carried out in a battery.

PART - B

9. What is the function of a cyclone separator?
10. State the differences between vapour compression and vapour absorption system of refrigeration.
11. Sketch the valve of an IC engine and name the parts.
12. What is petroil lubrication system?
13. State two troubles in Ignition system and their causes.
14. Give the types of gear box of an automobile.
15. State the purpose of slip joint.
16. State the main parts of a simple carburettor.

[Turn over.....

PART – C

17. (a) A surface condenser condenses 17600 kg of steam per hour. The steam pressure is 0.2 bar and its quality is 0.88. Cooling water enters at 40°C and leaves at 50°C. The condenser is made of 23mm tubes. The velocity of water in the tube is 1.8m/sec. Calculate the number of tubes used in the condenser. The temperature of the condensate is 60°C.

(Or)

(b) Explain the working of a vapour absorption system of refrigeration with a neat sketch.

18. (a) (i) Explain the overhead cam shaft valve actuating mechanism.
(ii) Draw a connecting rod and explain its salient features.

(Or)

(b) The following readings were taken during the test of a single cylinder four stroke oil engine.

Cylinder diameter	= 250mm.
Stroke length	= 400mm.
Mean effective pressure	= 6.5 bar.
Engine speed	= 250 rpm.
Net load on brake drum	= 1080 N.
Effective diameter of brake drum	= 1.5m.
Fuel used per hour	= 10 kg.
Calorific value of fuel	= 44300 kJ/kg .

Calculate:
(i) Indicated power,
(ii) Brake power,
(iii) Mechanical efficiency,
(iv) Indicated thermal efficiency.

19. (a) (i) Explain the working of pump assisted water cooling system.
(ii) Explain the functioning of MPFI system with a simple sketch.

(Or)

(b) (i) Describe the construction and operation of electrical fuel pump.
(ii) Explain the pump circulation cooling system for IC engine.

20. (a) (i) With a simple sketch, describe the working of single plate clutch.

(ii) Write a short note on air suspension.

(Or)

(b) (i) Explain the construction and working of telescopic type shock absorber.

(ii) Describe the collapsible steering system with a sketch.

21. (a) (i) Write down any three troubles and causes in braking system.

(ii) Write short note on pollution control in petrol engines.

(Or)

(b) Describe the battery coil ignition system with a line diagram.
