Register No.:

792

October 2017

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.]

PART – A

1. State two merits and two demerits of thermal power plant.
2. Define condenser efficiency.
3. What is the function of a flywheel?
4. Define specific fuel consumption.
5. State the purpose of lubrication system.
6. Name the components of a clutch.
7. Write down the types of gear boxes.
8. What are the types of wheels?

PART – B

9. State the necessity for compounding and types of compounding of steam turbines.
10. Give the purpose of different types of piston rings.
11. Sketch the valve of an IC engine and name its important features.
12. Sketch the thermo siphon system and name the parts.
13. What are the factors of wheel alignment?
14. Describe the working of air suspension system.
15. State any two troubles in ignition system and remedies for them.
16. List the important components of lighting system of an automobile.

[Turn over...

PART – C

17. (a) A surface condenser condenses 17600kg 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 diameter tubes. If the velocity of cooling water in the tube is 1.8m/sec, calculate the number of tubes used in the condenser. The temperature of condensate is 60°C.

(Or)

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

18. (a) Explain the working of a four stroke cycle petrol engine with simple sketches.

(Or)

(b) A six cylinder SI engine works on 4 stroke cycle. The bore of each cylinder is 70mm and the stroke 100mm. The clearance volume is 67cc. At the speed of 3300rpm, the fuel consumption is 18.5kg/hr and the torque developed is 135Nm. Calculate brake thermal efficiency if the calorific value of the fuel is 45000kJ/kg. Take γ=1.4 for air.

19. (a) (i) With a simple sketch, explain the working of a pump assisted water cooling system.
(ii) Draw the layout of a fuel feed system of a petrol engine and lists the salient parts.

(Or)

(b) (i) Explain the working of AC mechanical fuel pump with a sketch.
(ii) Write short note on MPFI system.

20. (a) Explain the working of a multi-plate clutch with neat sketch.

(Or)

(b) With a neat sketch describe the construction and operation of a synchromesh gear box.

21. (a) Explain the working of air assisted hydraulic braking system.

(Or)

(b) Explain the working of a battery coil ignition system.
