Name of subject: POWER ENGINEERING   **Unit Test :I**
Subject code: 17529   **Course : ME**
Semester: V

Chapter 1

1. Draw Diesel cycle on PV and TS diagram?   3M
2. Draw Carnot cycle on PV and TS diagram?   3M
3. Draw actual valve timing diagram of 4-stroke petrol engine.   3M
4. State any four effects of detonation.   3M
5. Differentiate between supercharging and turbocharging in IC engine. 3M
6. Differentiate between two stroke and four stroke engine.   3M
7. State the equation of thermal efficiency of carnot cycle and state the meaning of each term involved in it.   3M
8. Explain the process of combustion in diesel engine.   4 M
9. Explain working of simple carburettor with neat sketch.   4M
10. Explain the process of combustion in petrol engine.   4M
11. Explain the cross flow and uniform scavenging with neat sketch   4M
12. Inventor claims of developing a heat engine having specifications as: Power developed=71KW, fuel burnt per hour=7.2Kg, Cv=44000kJ/kg, temperature of source=730deg. Celsius, temperature of sink=30deg. Celsius. Verify his claim.   4M
13. If compression ratio of auto cycle is changed from 5 to 6. What is the percentage increase in the efficiency?   4M

Chapter 2

14. Define for IC engine: 1) IP,   2) BP.   3) Mechanical efficiency.   3M
15. Define stroke, piston speed and compression ratio.   3M
16. List the four lubricant additives used in IC engine.   3M
17. Write two pollutants in exhaust gasses and explain their effects on human body and atmosphere.   3M
18. What is the function of catalytic convertor and explain the working of two way catalytic convertor?   4M

19. A four cylinder 4-stroke petrol engine works on m.e.p. of 5bar and speed 1200rpm. Find indicator power if diameter of piston is 100mm and length of stroke 150mm and also find brake power if mechanical efficiency is 80percent. 4M

20. The following observations were made while taking trial on a single cylinder I.C. engine.
Brake power=45KW, mechanical efficiency=80percent, brake thermal efficiency=35percent, calorific value of fuel=42000KJ/kg.
Determine: 1) Indicator power.   2) Fuel consumption. 4M

21. What is the purpose of testing in IC engine? Write the Morse test to determine the frictional power of an engine. 4M

22. What is the purpose of motoring test related to IC engine? Describe the procedure of conducting motoring test. 4M

23. What is the necessity of heat balance sheet? Explain the values which are required to complete heat balance sheet of IC engine. 4M