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**5th Sem / Branch : Mechanical**  
**Sub. : Thermodynamics-II**

Time : 3Hrs.

M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory  
(10x1=10)

- Q.1 A Petrol engine work on : (CO-1)  
a) Otto cycle                      b) Rankine cycle  
c) Diesel cycle                      d) Carnot cycle
- Q.2 The function of ignition coil in battery ignition system is to (CO-2)  
a) Increase the current      b) Increase the voltage  
c) Reduce sparking      d) All the above
- Q.3 The basic requirements of a fuel injection system in C.I. engine are. (CO-3)  
a) Precisely defined timing  
b) Accurate metering of fuel  
c) Proper atomisation of fuel  
d) All the above
- Q.4 Fuel injection timing in fuel injection of diesel engine is adjusted by. (CO-3)  
a) Plunger rotation  
b) Cam and Tappet mechanism  
c) Control rack  
d) Needle valve
- Q.5 Over cooling of engine may cause. (CO-4)  
a) Failure of lubrication.

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- b) Decrease in friction losses  
c) Reduction in strength of parts  
d) Starting problem of engine
- Q.6 Lubrication of engine parts is used (CO-4)  
a) To reduce vibrations  
b) Prevent metal to metal contact between mating parts  
c) To reduce wear and tear of moving parts  
d) All the above
- Q.7 B.H.P. is determined by : (CO-5)  
a) Simple rope brake  
b) Band brake  
c) Hydraulic dynamo meter  
d) All the above
- Q.8 The purpose of governing in steam turbines is to : (CO-6)  
a) Reduce the effective heat drop.  
b) Reheat the steam and improve its quality  
c) Completely balance against end thrust  
d) Maintain the speed of the turbine
- Q.9 Mechanical efficiency of gas turbine as compare to internal combustion engine is : (CO-7)  
a) Higher                      b) Lower  
c) Same                      d) Unpredicted
- Q.10 The steam leaves the nozzle at a (CO-6)  
a) High pressure and low velocity  
b) High pressure and high velocity  
c) Low pressure and low velocity  
d) Low pressure and high velocity

**SECTION-B**

**Note:** Objective type questions. All questions are compulsory.  
(10x1=10)

- Q.11 Bore means \_\_\_\_\_ diameter of engine cylinder. (CO-1)

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- Q.12 A mixture having air fuel ratio of 15:1 is known as \_\_\_\_\_. (CO-2)
- Q.13 A car uses \_\_\_\_\_ ignition engine. (CO-2)
- Q.14 The two methods of fuel injection used in diesel engine are. (CO-3)
- Q.15 The function of a cooling system is to cool the engine as far as possible (True/False). (CO-4)
- Q.16 The engine will get over heated if belt loose. (True/False). (CO-4)
- Q.17 An engine working on dual cycle is known as \_\_\_\_\_ engine. (CO-5)
- Q.18 A surface condenser should be air tight. (True/False) (CO-6)
- Q.19 The two types of steam nozzles are \_\_\_\_\_. (CO-6)
- Q.20 What are their major components of RAMJET. (CO-7)

#### SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 What do you mean by following terms (a) Bore, (b) Dead centers c) Crank throw (d) Compression ratio. (CO-1)
- Q.22 Write the main parts of petrol engine. (CO-1)
- Q.23 How are the IC engine Classified. (CO-1)
- Q.24 What do you mean by carburetion and what is the purpose of carburetor? (CO-2)
- Q.25 Why is over cooling harmful for engines? (CO-4)
- Q.26 Explain splash lubrication with neat sketch? (CO-4)
- Q.27 Name the various properties of a lubricant for which it should be tested. (CO-4)
- Q.28 Explain common rail direct injection with neat sketch. (CO-3)

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- Q.29 State the requirements of fuel injection system used in CI engine. (CO-3)
- Q.30 Distinguish between Ip and BP. Which is greater? (CO-5)
- Q.31 A single cylinder IC engine working on four stroke cycle runs at a speed of 400 r/min. The engine cylinder is 10 cm in diameter and the stroke of the piston 15cm if the mean effective pressure is 6.5 bar calculate the IP developed by the engine. (CO-5)
- Q.32 What are various methods of reducing pollution in IC engines. (CO-5)
- Q.33 What do you mean by steam condenser explain its functions. (CO-6)
- Q.34 Give the disadvantage of solid propellant rockets. (CO-7)
- Q.35 Write the advantages of gas turbines over IC engine. (CO-7)

#### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Describe the battery ignition system, giving the sketch of complete ignition circuit. Compare it with Magneto ignition system. (CO-2)
- Q.37 Write the methods of Velocity Compounding of impulse turbine for achieving rotor speed reduction. (CO-6)
- Q.38 Draw the schematic diagram of an open cycle gas turbine. Explain in brief? (CO-7)

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