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Roll No. ....

**4th Sem. Branch : Mech. CNC, Mech, Adv. Manuf.  
Tech, Mech Engg (CAD/CAM Dsg & Robotics)  
Sub. : Thermodynamics-II/I.C. Engines**

**Time : 3 Hrs.**

**M.M. : 100**

**SECTION-A**

**Note: Multiple type Questions. All Questions are compulsory. (10x1=10)**

- Q.1 Lean air fuel mixture is required for  
a) Starting                      b) Idling  
c) Acceleration              d) Cruising
- Q.2 The function of ignition coil in battery ignition system is to  
a) Increase the current      b) Increase the voltage  
c) Reduce sparking          d) All of the above
- Q.3 Solid injection is also known as  
a) Airless injection          b) Rigid injection  
c) Brittle injection          d) Plastic injection
- Q.4 The ignition temperature of diesel fuel is about  
a) 750°C                      b) 60°C  
c) 400°C                      d) 50°C
- Q5. Evaporative cooling is used for  
a) Heavy trucks              b) Stationary engines  
c) Scooters                    d) None of the above

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- Q.6 Most commonly used lubricant in IC engine is  
a) Animal oil                  b) Vegetable oil  
c) Mineral oil                  d) Synthetic oil
- Q.7 The number of working strokes per minute in case of four stroke I.C. Engine will be equal to  
a) 4N                              b) 2N  
c) N                                d) 0.5N
- Q.8 Steam turbines are governed by following method  
a) Reheating governing      b) Regenerate governing  
c) Bypass governing          d) None of the other
- Q.9 Mechanical efficiency of gas turbine as compared to internal combustion engine is  
a) Higher                        b) Lower  
c) Same                          d) None of the above
- Q.10 Turbo propelled engine resembles in construction to  
a) Steam engine                b) Diesel engine  
c) Both                            d) None of the above

**SECTION-B**

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

- Q.11 Expand CRDI.
- Q.12 The compression ratio of petrol engine varies from \_\_\_\_.
- Q.13 Carburetor is used in \_\_\_\_\_ engine.
- Q.14 The airless injection is also known as \_\_\_\_\_.

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- Q.15 A lubricant should have \_\_\_\_\_ volatility..
- Q.16 The full form of CNG is \_\_\_\_\_.
- Q.17 The difference between indicated power and brake power is called \_\_\_\_\_.
- Q.18 When the cross sectional area of the nozzle increases continuously from entrance to exit it is called \_\_\_\_\_.
- Q.19 Define Carburetor.
- Q.20 Define Air Fuel Ratio.

### SECTION-C

**Note: Short answer type Questions. Attempt any twelve questions out of fifteen Questions. (12x5=60)**

- Q.21 Explain Carnot cycle with diagram.
- Q.22 Compare two stroke and four stroke engines.
- Q.23 Define carburetion and explain the factors affecting carburetion.
- Q.24 Explain MPFI in petrol injection system.
- Q.25 Explain fuel injection pump and fuel injector.
- Q.26 What is lubrication? Name the types of lubrication system.
- Q.27 The diameter and stroke length of an I.C. Engine is 15cm and 20cm. Determine the swept volume.
- Q.28 What is the necessity of cooling system?
- Q.29 Give the relative advantages of water cooling system over air cooling system.
- Q.30 Explain the working of rope brake dynamometer with the help of neat sketch.
- Q.31 Explain Morse test and its purpose.

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- Q.32 Write the functions of steam condenser.
- Q.33 What is compounding of steam turbines. Name different methods of compounding.
- Q.34 Write a short note on rocket engine.
- Q.35 What is the difference between supercharging and turbo charging?

### SECTION-D

**Note: Long answer questions. Attempt any two questions out of three Questions. (2x10=20)**

- Q.36 Explain Four Stroke CI engine in detail.
- Q.37 Explain battery ignition system with the help of neat sketch.
- Q.38 Explain closed cycle constant pressure gas turbine with the help of neat sketch.

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