S. B. Roll. No……

THERMODYNAMICS-II
5th Exam/Mech./6953/Jun'2022
(For 2018 Batch Onwards)

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Give answer in one line. **15x1=15**

a. Define heat engine.
b. What is TDC in IC engine?
c. Define Carburetion.
d. What is air fuel ratio?
e. Why injector is used in diesel engine?
f. Where is fuel feed pump located in fuel system of diesel engine?
g. What is flash point of lubricating oil?
h. What is the primary function of lubrication in I.C. engine?
i. Define Brake Horse Power.
j. What is mechanical efficiency?
k. Define Governing of steam turbine.
l. What is vacuum efficiency of a condenser?
m. Name the main parts of a simple rocket motor.
n. What is the main function of fan in water cooling system?
o. Name all the components of fuel injection system.

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. Draw the valve timing diagram of four stroke diesel engine and explain its strokes.
ii. What are the functions of a carburettor?
iii. What requirement needs to be fulfilled by fuel injection system for proper working in diesel engine?
iv. What are the advantages of water-cooling system?
v. What is lubricant? How various lubricants are classified?
vi. Explain the working of the battery/coil ignition system with neat sketch.
vii. The inlet and outlet temperature of cooling water to a condenser are 24.5^0C and 38.5^0C respectively. The vacuum produced in the condenser is 695 mm of Hg. With barometer reading of 760 mm of Hg, find the condenser efficiency.
viii. Explain the principle of operation of Ram-jet engine.

SECTION-C

Q3. Attempt any three questions. **3x10=30**

a. Compare two stroke engines with four stroke engine.
b. Explain the various functions of lubrication.
c. A four stroke four-cylinder petrol engine has 62 mm diameter of bore and 92 mm stroke length. On test, it developed a torque of 60 Nm, when running at 2500 rpm. If clearance volume of each cylinder is 55 cm^3, the relative efficiency is 0.5 and calorific value of petrol is 42 MJ/kg. Find the fuel consumption in kg/hr and the brake mean effective pressure.
d. Differentiate the Impulse turbine and Reaction turbine.
e. Draw P-V and T-S diagrams of Constant pressure open cycle gas turbine and explain its cycle of operation.