Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: MEC501 and Course Name: Internal Combustion Engines

Time: 1hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1. Engines of different cylinder dimensions, power and speed are compared on the basis of
Option A: maximum pressure
Option B: fuel consumption
Option C: mean effective pressure
Option D: unit power

Q2. In a four-stroke IC engine cam shaft rotates at
Option A: same speed as crankshaft
Option B: twice the speed of crankshaft
Option C: half the speed of crankshaft
Option D: four times the speed of crankshaft

Q3. Engines used for ships are normally
Option A: four-stroke SI engines of very high power
Option B: two-stroke CI engines of very high power
Option C: four-stroke CI engines of high speed
Option D: two-stroke SI engines of high power

Q4. Lean air mixture is required during
Option A: idling
Option B: starting
Option C: accelerating
Option D: cruising

Q5. For maximum thermal efficiency, the fuel-air mixture in SI engines should be
Option A: lean
Option B: rich
Option C: stoichiometric
Option D: may be rich or lean

Q6. Modern carburetors provide the correct quality of air-fuel mixture during
Option A: starting
Option B: idling
Option C: cruising
Option D: all conditions

Q7. For a four cylinder engine operating at N rpm, the contact breaker must make and break the circuit
Option A: N times
Option B: 2N times
Option C: N/2 times
Option D: 3N/4 times

Q8. The magneto in an automobile is basically
Option A: Transformer
Option B: D.C. Generator
Option C: Capacitor
Option D: Magnetic circuit

Q9. As a result of detonation in S.I engine, which of the following parameter attains very high value
Option A: Peak pressure
Option B: Rate of rise of pressure
Option C: Rate of rise of temperature
Option D: Peak temperature

Q10. _____ System requires a high pressure multi-stage compressor
Option A: Jerk Pump System
Option B: Common Rail System
Option C: Air Injection System
Option D: Distributor System

Q11. _____ the self-ignition temperature, _____ the delay period.
Option A: Lower, longer
Option B: Lower, Shorter
Option C: Higher, shorter
Option D: Higher, Longer

Q12. In a fuel injector, spindle called pintle is provided in order to
Option A: Avoid formation of NOx
Option B: Avoid knocking
Option C: Avoid enrichment of the charge
Option D: Avoid weak injection and dribbling

Q13. In CI Engines, Orderly and controlled movement of air with a particular direction of a flow is called as
Option A: Turbulence

Option B: Swirl
Option C: Supercharging
Option D: Turbocharging

Q14. For multi-hole nozzle, number of holes varies from
Option A: 4 to 18
Option B: 1 to 3
Option C: 20 to 25
Option D: 30 to 35

Q15. CI Engine must always operate with excess air because
Option A: Only air is sucked during suction stroke
Option B: They are heavier and bulkier engines
Option C: When operated near chemically correct ratio, poor distribution of the fuel and its limited intermixing with air results in objectionable smoke
Option D: They are used in heavy multi-axle transport/load carrying vehicles which are often working in adverse conditions.

Q16. Mist lubrication system is used in
Option A: Four stroke petrol engine
Option B: Two stroke petrol engine
Option C: Wankle Engine
Option D: Four stroke diesel engine

Q17. In most automobiles, which lubrication system is commonly used?
Option A: Splash system
Option B: Pressure system
Option C: Petrol system
Option D: Gravity system

Q18. Which of the following viscosity indices shows the larger changes in viscosity with temperature?
Option A: 50
Option B: 100
Option C: 45
Option D: 10

Q19. Engine overheating may be due to
Option A: Stuck radiator cap
Option B: Open thermostat
Option C: Broken fan belt
Option D: Excess coolant

Q20. Morse test can be conducted for
Option A: Single Cylinder Petrol engines
Option B: Single Cylinder Diesel engines
Option C: Multi cylinder Petrol engines

Option D: Multi cylinder Diesel engines

Q21. If the compression ratio of an engine working on Otto cycle is increased from 5 to 7, the percentage increase in efficiency will be

Option A: 2%

Option B: 4%

Option C: 8%

Option D: 14%

Q22. A gas engine has a swept volume of 300 cm^3 and clearance volume of 25 cm^3. Its volumetric efficiency is 0.88 and mechanical efficiency is 0.90. The volume of the mixture taken in per stroke is

Option A: 248 cm^3

Option B: 252 cm^3

Option C: 264 cm^3

Option D: 286 cm^3

Q23. The ratio of the work obtained at the crankshaft in a given time to the energy supplied during the same time is called

Option A: Mechanical efficiency

Option B: Overall efficiency

Option C: Indicated thermal efficiency

Option D: Volumetric efficiency

Q24. Hydrocarbons are decomposed into smaller hydrocarbons by

Option A: reforming

Option B: refining

Option C: cracking

Option D: polymerization

Q25. Producer gas is produced by

Option A: carbonization of coal

Option B: passing steam over incandescent coke

Option C: passing air and a large amount of steam over waste coal at about 65°C

Option D: partial combustion of coal, coke, anthracite coal or charcoal in a mixed air steam blast