

[SSC - JE (ME) I.C.ENGINE]

1. Compression ratio for diesel engine may have a range of

- a) 8 to 10 b) 16 to 20
c) 10 to 15 d) none of these

[2008]

Ans: b)

2. The two stroke cycle engine has

- a) one suction valve and one exhaust valve operated by one cam
b) one suction valve and one exhaust valve operated by two cams
c) only ports covered and uncovered by piston to effect charging and exhausting
d) none of the above

[2008]

Ans: c)

3. Morse test is used for multi-cylinder spark ignition engine to determine

- a) Thermal efficiency
b) Mechanical efficiency
c) Volumetric efficiency
d) Relative efficiency

[2008]

Ans: b)

4. For diesel engine, the method of governing employed is

- a) Quality governing
b) Quantity governing
c) Hit and miss governing
d) None of the above

[2008]

Ans: a)

5. For the same compression ratio

- a) Otto cycle is more efficient than the Diesel cycle
b) Diesel cycle is more efficient than the Otto cycle
c) both Otto and Diesel cycles are equally efficient

d) compression ratio has nothing to do with efficiency

[2009]

Ans: a)

6. Which of the following is not an internal combustion engine?

- a) 2-stroke petrol engine
b) 4-stroke petrol engine
c) Diesel engine
d) Steam engine

[2009]

Ans: d)

7. Compression ratio of I.C. engines is

- a) The ratio of volume of air in cylinder before compression stroke and after compression stroke
b) Volume displaced by piston per stroke and clearance volume in cylinder
c) Ratio of pressure after compression and before compression
d) Swept volume/cylinder volume

[2010]

Ans: b)

8. In a diesel engine, the fuel is ignited by

- a) Spark
b) Injected fuel
c) Heat resulting from compressing air that is supplied for combustion
d) Igniters

[2010]

Ans: c)

9. Number of working strokes per minute for a two stroke cycle engine as compared to speed of the engine in rpm is

- a) half b) double
c) same d) four times

[2011]

Ans: b)

10. Quality of ignition of petrol is measured by

- a) Octane number

- b) Calorific value
- c) Specific fuel consumption
- d) Cetane number

[2012]

Ans: d)

Ans: a)

[2011]

11. The ratio of air required for complete combustion of carbon to carbon dioxide and that to carbon monoxide is

- a) 2.0
- b) 4.0
- c) 1
- d) 0.5

[2012]

Ans: a)

12. A compression ignition engine is a

- a) Diesel engine
- b) Steam turbine
- c) Petrol engine
- d) Steam engine

[2012]

Ans: a)

13. In diesel engine, the ignition takes place

- a) Carburettor
- b) Automatically due to high temperature of compressed air
- c) By spark plug
- d) Automatically due to high temperature compressed fuel

[2012]

Ans: b)

14. The petrol engine works on

- a) Rankine cycle
- b) Carnot cycle
- c) Otto cycle
- d) Joule cycle

[2012]

Ans: c)

15. Morse test is conducted on multi-cylinder engine to find the engine's

- a) Stroke length
- b) Emission performance
- c) Compression ratio
- d) Indicated power

16. Lean air fuel mixture is required for

- a) Cruising
- b) Acceleration
- c) Starting
- d) Idling

[2012]

Ans: a)

17. What material is used for the insulating body of a spark plug?

- a) Dolomite
- b) Glass
- c) Silica
- d) Alumina

[2012]

Ans: d)

18. Which element regulates the pressure strokes in the fuel injection pump of a diesel engine?

- a) Pump shaft
- b) Lift of plunger
- c) Needle valve
- d) Control rack

[2012]

Ans: d)

19. Function of carburettor is to supply

- a) air and petrol mixture
- b) air and diesel mixture
- c) only petrol
- d) petrol and diesel mixture

[2012]

Ans: a)

20. In a boiler, the feed check valve is used to

- a) control the feed water flow rate
- b) check the water level in drum
- c) ensure unidirectional feed flow to drum
- d) check quality of feed water

[2013]

Ans: c)

21. What approximate percentage of heat of combustion is lost to the jacket cooling water?

- a) 5%
- b) 10%

- c) 15% d) 25%

Ans: d)

22. In diesel engine, the suction contains

- a) air only
b) fuel only
c) mixture of air and fuel
d) air or fuel

Ans: c)

23. The fluid drawn in during suction in petrol engine contains

- a) fuel only
b) fuel or air
c) air only
d) mixture of air and fuel

Ans: d)

24. Spark ignition engine is

- a) petrol engine
b) diesel engine
c) steam engine
d) C.I. engine

Ans: a)

25. The working fluid for a diesel engine during the suction stroke is

- a) fuel-air mixture
b) fresh air
c) products of combustion
d) none of the above

Ans: b)

26. In internal combustion engine terminology MPFI stands for

- a) Multi Pressure Fuel Injection
b) Multi Point Fired Ignition
c) Multi Point Fuel Injection
d) Multi Pressure Fired Ignition

Ans: c)

[2013]

27. For complete burning of 1 kg of carbon, the air required will be about

- a) 2.67 kg
b) 12.7 kg
c) 11.6 kg
d) 14.5 kg

[2013]

Ans: c)

28. Knocking tendency in an SI engine reduces with increasing

- a) compression ratio
b) wall temperature
c) supercharging
d) engine speed

[2013]

Ans: d)

29. Cetane number of a fuel is a measure of its

- a) viscosity
b) volatility
c) ignition quality
d) API specific gravity

[2013]

Ans: c)

30. For the same maximum pressure and peak temperature, which cycle will be most efficient?

- a) Diesel
b) Dual combustion
c) Otto
d) None of the above

[2013]

Ans: a)

31. For a 4-stroke diesel engine, the compression ratio is 21 : 1 and the cut-off ratio is 2 : 1. What is its expansion ratio?

- a) 7 : 1 b) 10.5 : 1
c) 12 : 1 d) 19 : 1

[2014]

Ans: b)

[2013]

32. In diesel engines, the duration between the time of injection and ignition, is known as

- a) pre-ignition period
- b) delay period
- c) ignition period
- d) burning period

[2014]

Ans: b)

33. The process of supplying the intake air to the engine cylinder at a density more than the density of the surrounding atmosphere is known as

- a) scavenging
- b) detonation
- c) supercharging
- d) polymerisation

[2014]

Ans: c)

34. Self-ignition temperature of diesel as compared to petrol

- a) Is higher
- b) Is lower
- c) Is same
- d) Varies considerably

[2014]

Ans: a)

35. Morse test is conducted on

- a) vertical engines
- b) horizontal engines
- c) single cylinder engines
- d) multi cylinder engines

[2014]

Ans: d)

36. In spark ignition (SI) engines, the possibility of knocking can be reduced by

- a) increasing compression ratio
- b) decreasing compression ratio
- c) increasing the coolant temperature
- d) advancing the spark timing

[2014]

Ans: b)

37. Higher compression ratio in diesel engine results in

- a) lower temperature
- b) lower pressure
- c) same pressure
- d) higher pressure

[2014]

Ans: d)

38. Which part of a petrol engine would need modifications if the engine is to be made to run on LPG?

- a) Piston
- b) Crank shaft
- c) Valves
- d) Carburettor

[2014]

Ans: d)

39. The delay period in a petrol engine is of the order of

- a) 0.001 sec
- b) 0.002 sec
- c) 0.01 sec
- d) 0.05 sec

[2014]

Ans: b)

40. Octane number of iso-octane is

- a) 50
- b) 70
- c) 0
- d) 100

[2014]

Ans: d)

41. The silencer of an IC engine

- a) reduces noise
- b) decreases brake specific fuel consumption
- c) increases brake specific fuel consumption
- d) has no effect on efficiency

[2014]

Ans: a)

42. The compression ratio for a practical diesel engine usually lies in the range

- a) 5 – 7
- b) 7 – 9
- c) 10 – 15
- d) 16 – 22

[2014]

Ans: d)

43. For a four-cylinder engine, the firing order of evenness of torque is

- a) 1 – 2 – 3 – 4
- b) 1 – 3 – 2 – 4
- c) 1 – 4 – 3 – 2
- d) 1 – 3 – 4 – 2

[2014]

Ans: d)

44. In case of S.I engine high thermal efficiency the fuel air mixture ratio should be

- a) lean
- b) rich
- c) irrespective of mixture
- d) chemically correct

[2015]

Ans: a)

45. For the same output, same speed and same compression ratio the thermal efficiency of a two stroke cycle petrol engine as compared to that for four stroke cycle petrol engine is

- a) more
- b) less
- c) same as long as compression ratio is same
- d) same as long as output is same

[2015]

Ans: b)

46. The chemically correct stoicheiometric ratio for petrol is

- a) 14.8 : 1
- b) 11 : 1
- c) 18 : 1
- d) 15 : 1

[2015]

Ans: d)

47. The mean effective pressure of an Otto cycle is the ratio between:

- a) the net work produced and the clearance volume
- b) the net work produced and the swept volume

c) the net work produced and the cylinder volume

d) the net work produced and the cylinder volume

[2015]

Ans: b)

48. The Otto cycle thermal efficiency, with usual notation, is given as, where r is compression ratio and γ is the adiabatic index

a) $\eta_0 = 1 - r^{\gamma-1}$

b) $\eta_0 = 1 - r^\gamma$

c) $\eta_0 = 1 - \left(\frac{1}{r^{\gamma-1}}\right)$

d) $\eta_0 = 1 - \left(\frac{1}{r^\gamma}\right)$

[2015]

Ans: c)

49. For the same inlet condition and compression ratio, the efficiency of an Otto cycle is

- a) Lower than that of the diesel cycle
- b) Lower than or equal to that of the diesel cycle
- c) Higher than that of the diesel cycle
- d) Higher than or equal to that of the diesel cycle

[2015]

Ans: c)

50. The best utilization of fuel (least consumption) results when the air supply is

- a) Surplus by 10%
- b) Surplus by 20%
- c) Deficient by 10%
- d) Chemically correct

Ans: a)