University of Mumbai

Examination 2020 under cluster 9 (FAMT)

These are sample MCQs to indicate pattern, may or may not appeared in examination

Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: **MEC501** and Course Name: **Internal Combustion Engines**

Time: 1 hour Max. Marks: 50

==========

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

Q1.	The thermal efficiency of CI engine is higher than that of SI engine due to
Option A:	higher compression ratio
Option B:	higher weight fuel
Option C:	constant pressure heat addition
Option D:	higher density fuel
Q2.	The Mean effective pressure of Otto cycle is
Option A:	inversely proportional to pressure ratio
Option B:	does not depend on pressure ratio
Option C:	directly proportional to pressure ratio
Option D:	proportional to square root of pressure ratio
Q3.	An engine working on Otto cycle has the following conditions : Pressure at the beginning of compression is 1 bar and pressure at the end of compression is 8. Take gamma=1.4. The air standard efficiency of the engine is,
Option A:	42.76%
Option B:	43.76%
Option C:	44.76%
Option D:	45.76%
Q4.	In air bleeding device, main metering jet is fitted about
Option A:	5 mm above petrol level
Option B:	25 mm above petrol level
Option C:	5 mm below petrol level
Option D:	25 mm below petrol level
Q5.	The value of A/F reduces as
Option A:	Pressure at entry of carburettor venturi decreases
Option B:	Density of air decreases
Option C:	Pressure at fuel surface in float chamber decreases
Option D:	Density of air increases

Q6.	Which of the following leads to decreasing efficiency of SI engines
Option A:	High compression ratio
Option B:	Increased inlet temperature of charge
Option C:	Detonation control methods
Option D:	Supercharging
Q7.	Which of the following SI engine combustion chambers will lead to high detonation at low compression ratios
Option A:	T head combustion chamber
Option B:	I head combustion chamber
Option C:	F head combustion chamber
Option D:	Bath tub form combustion chamber
Q8.	Ignition lag in SI engine is increases with
Option A:	Increase in inlet temperature
Option B:	Increase in turbulence
Option C:	High self ignition temperature of fuel
Option D:	Increase in inlet pressure
Q9.	For starting purpose which of the following component of battery ignition system is bypassed?
Option A:	Primary winding
Option B:	Secondary winding
Option C:	Ballast resistor
Option D:	Capacitor
Q10.	The antiknock agents for compression ignition engines is
Option A:	Napthene
Option B:	Tetra ethyl lead
Option C:	Hexadecane
Option D:	Amyl nitrate
Q11.	During the combustion with increase in speed the crank angle required for flame propagation
Option A:	not affected
Option B:	increases
Option C:	decreases
Option D:	first increases then decreases
Q12.	The cetane number of diesel oil, generally available, is
Option A:	20 to 25
Option B:	40 to 55
Option C:	25 to 30
Option D:	30 to 40

Q13.	In cetane number the two reference fuels used for cetane rating are
Option A:	Cetane and alpha-methyl naphthalene
Option B:	Cetane and iso-octane
Option C:	Cetane and normal heptane
Option D:	Cetane and tetra ethyl lead
Q14.	The expansion of fuel in a four stroke cycle diesel engine
Option A:	Starts at 15° before top dead center and ends at 30° after top dead center
Option B:	Starts at top dead center and ends at 30° after top dead center
Option C:	May start and end anywhere
Option D:	Starts at 15° after top dead center and ends at 30° before bottom dead center
Q15.	In compression ignition engines, the duration between the time of injection and ignition, is known as
Option A:	Delay period
Option B:	Pre-ignition period
Option C:	Period of ignition
Option D:	Burning period
Q16.	Volumetric efficiency of supercharged engine is between
Option A:	70 – 80%
Option B:	80 – 90%
Option C:	90 – 100%
Option D:	100 – 110%
Q17.	Compared to engine driven supercharger the exhaust driven supercharger is
Option A:	supplies more air
Option B:	easy to handle
Option C:	utilizes the exhaust energy of the engine
Option D:	matching with engine is easy
Q18.	The Fuel-air cycle efficiency is less than air-standard cycle efficiency by an amount equal to
Option A:	loss due to specific heat variation and chemical equilibrium
Option B:	pumping loss
Option C:	friction loss
Option D:	exhaust blow down loss
Q19.	The major loss in a CI engine is
Option A:	direct heat loss
Option B:	rubbing friction loss
Option C:	pumping loss
Option D:	loss due to incomplete combustion

Q20.	An effective method to prevent detonation in SI engines is
Option A:	heating of the charge
Option B:	increasing the charge pressure
Option C:	cooling of the charge
Option D:	decreasing the charge pressure
Q21.	The fuel gasohol is a mixture of
Option A:	10% ethanol + 90% gasoline
Option B:	90% ethanol + 10% gasoline
Option C:	40% ethanol + 60% gasoline
Option D:	50% ethanol + 50% gasoline
Q22.	The following observations were recorded during a trial of a four-stroke, single-cylinder oil engine. The average area of the indicator diagram = 9.5 cm2; Length of the indicator diagram = 8.5 cm; spring constant = 5.5 bar/cm. The indicated mean effective pressure is,
Option A:	6.14 bar
Option B:	6.24 bar
Option C:	6.34 bar
Option D:	6.44 bar
Q23.	In the fuel Addition of tetraethyl lead in gasoline is being discontinued as
Option A:	blocks the catalytic converter
Option B:	it has bad odor
Option C:	it is costly
Option D:	it is costly
Q24.	In case of VCR engines which of the following statement is true
Option A:	High CR is used at low load and low CR is used at full load
Option B:	High CR is used at high load and low CR is used at low load
Option C:	High CR is used at 3/4th load and low CR is used at low load
Option D:	Compression ratio is fixed irrespective of load
Q25.	In GDI engines the fuel is injected
Option A:	Inside intake manifold
Option B:	Close to intake valve
Option C:	Close to exhaust valve
Option D:	Inside cylinder