

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Program: BE Mechanical Engineering

Curriculum Scheme: Rev2012

Examination: Third Year Semester V

Course Code: MEC 501 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.	In a diesel engine, the duration between the time of injection and ignition, is known as
Option A:	Pre-ignition period
Option B:	Delay period
Option C:	Period of ignition
Option D:	Burning period
Q2.	At high altitudes, the automobile requires
Option A:	Chemically correct mixture
Option B:	Rich mixture
Option C:	Lean mixture
Option D:	Correct mixture
Q3.	The theoretically correct mixture of air and petrol is _____
Option A:	10 : 1
Option B:	15 : 1
Option C:	20 : 1
Option D:	25 : 1
Q4.	_____ number is a useful measure of _____ tendency.
Option A:	Performance, detonation
Option B:	Reynolds , detonation
Option C:	Performance, knocking
Option D:	Reynolds , knocking
Q5.	In a four-stroke IC engine cam shaft rotates at

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Option A:	half the speed of crankshaft
Option B:	twice the speed of crankshaft
Option C:	same speed as crankshaft
Option D:	Four time crank shaft speed
Q6.	In four stroke engine there is one power stroke in of crankshaft rotation.
Option A:	360 deg
Option B:	90 deg
Option C:	180 deg
Option D:	720 deg
Q7.	The ignition quality of diesel oil is expressed by
Option A:	Cetane number
Option B:	Octane number
Option C:	Low Calorific value
Option D:	High Calorific value
Q8.	Which is not part of fuel injection system
Option A:	Filter
Option B:	pump
Option C:	injectors
Option D:	induction coil
Q9.	The operation of forcing additional air under pressure into the engine cylinder is known as
Option A:	carburetion
Option B:	turbulence
Option C:	delay period

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Option D:	supercharging
Q10.	The most important characteristic of a lubricating oil is its
Option A:	Viscosity
Option B:	Chemical stability
Option C:	Resistance against corrosion
Option D:	Physical stability
Q11.	Exhaust gas recirculation is effective in reducing which emissions?
Option A:	NO _x
Option B:	CO
Option C:	UHC
Option D:	SO ₂
Q12.	Find the brake thermal efficiency of the engine running on fuel of calorific value 43 MJ/kg and BSFC of 0.225 kg/kWh
Option A:	36.36%
Option B:	37.20%
Option C:	28.50%
Option D:	19.11%
Q13.	The method of determination of indicated power of a multi cylinder spark ignition engine is by the use of
Option A:	Morse test
Option B:	Prony brake test
Option C:	Motoring test
Option D:	Heat balance test
Q14.	Supercharging is the process of
Option A:	Supplying the intake of an engine with air at a density greater than the density of

University of Mumbai
Examination 2020 under cluster 4 (PCE)

	the surrounding atmosphere
Option B:	Providing forced cooling air
Option C:	Injecting excess fuel for raising more loads
Option D:	Supplying compressed air to remove combustion products fully
Q15.	An engine indicator is used to determine the following
Option A:	Speed
Option B:	Temperature
Option C:	Volume of cylinder
Option D:	m.e.p. and I.H.P
Q16.	If the temperature of intake air in internal combustion engine increases, then its efficiency will
Option A:	Remain same
Option B:	Decrease
Option C:	Increase
Option D:	Increase first and then decreases
Q17.	The lubrication oil flow in an engine is in the order as
Option A:	Oil strainer, oil pump, relief valve, oil filter, cylinder block, cylinder head and oil pan
Option B:	Oil pump, Oil strainer, relief valve, oil filter, cylinder block, cylinder head and oil pan
Option C:	Oil strainer, oil filter, relief valve, oil pump, cylinder block, cylinder head and oil pan
Option D:	Oil strainer, oil pump, relief valve, oil filter, cylinder head, cylinder block, and oil pan
Q18.	Which of the following medium is compressed in a Diesel engine cylinder?
Option A:	Air alone
Option B:	Air and fuel

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Option C:	Air and lub oil
Option D:	Fuel alone
Q19.	A stoichiometric air-fuel ratio is
Option A:	Chemically correct mixture
Option B:	Lean mixture
Option C:	Rich mixture for idling
Option D:	Rich mixture for over loads
Q20.	The ratio of indicated thermal efficiency to the corresponding air standard cycle efficiency is called
Option A:	Net efficiency
Option B:	Efficiency ratio
Option C:	Relative efficiency
Option D:	Overall efficiency
Q21.	If diesel fuel of 30 °API is injected at 150 bar and the pressure in combustion chamber is 40 bar what will be velocity of injection if coefficient of velocity of nozzle is 0.875 and specific gravity of fuel is given by formula $Sp. Gt. = 141.5 / (131.5 + \text{oAPI})$
Option A:	158.45 m/s
Option B:	138.65 m/s
Option C:	186.33 m/s
Option D:	173.55 m/s
Q22.	The function of a distributor in a coil ignition system of I.C. engines is
Option A:	To distribute spark
Option B:	To distribute power
Option C:	To distribute current

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Option D:	To time the spark
Q23.	By higher octane number of spark ignition fuel, it is meant that the fuel has
Option A:	Higher heating value
Option B:	Higher flash point
Option C:	Lower volatility
Option D:	Longer ignition delay
Q24.	The volumetric efficiency of a well designed engine may be
Option A:	30 to 40%
Option B:	40 to 60%
Option C:	60 to 70%
Option D:	75 to 90%
Q25.	The thermal efficiency of petrol and gas engines is about
Option A:	15%
Option B:	30%
Option C:	50%
Option D:	70%

University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Mechanical Engineering

Curriculum Scheme: Rev2012

Examination: Third Year Semester V

Course Code: MEC501 and Course Name: Internal Combustion Engines

Time: 1 hour

Max. Marks: 50

Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	B
Q3.	B
Q4	A
Q5	A
Q6	D
Q7	A
Q8.	D
Q9.	D
Q10.	A
Q11.	A
Q12.	B
Q13.	A
Q14.	A
Q15.	D
Q16.	B
Q17.	A
Q18.	A
Q19.	A
Q20.	C
Q21.	B
Q22.	D
Q23.	D
Q24.	D
Q25.	B

University of Mumbai
Examination 2020 under cluster 4 (PCE)