

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 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
Q2.	For CI Engine, the overall air-fuel ratio may vary from about _____ at no load to _____ at full load.
Option A:	20:1, 100:1
Option B:	100:1, 20:1
Option C:	1:20, 1:100
Option D:	1:100, 1:20
Q3.	The radiator cooling tubes are generally made of
Option A:	Rubber
Option B:	Plastic
Option C:	Brass
Option D:	Copper
Q4.	Because of poor distribution of fuel particles, combustion continues during part of the remainder of the expansion stroke. It is also known as
Option A:	Ignition delay period
Option B:	Uncontrolled Combustion
Option C:	Controlled Combustion
Option D:	Afterburning
Q5.	Compression ratio in diesel engines is of the order of
Option A:	5–7
Option B:	7–10
Option C:	10–12
Option D:	14–20
Q6.	Which of the following is the port fuel-injection system?
Option A:	D-MPFI

Option B:	L-MPFI
Option C:	Gasoline Direct Injection
Option D:	Throttle Body Injection
Q7.	Every solid injection:
Option A:	Needs a pressurizing unit only
Option B:	Needs an atomizing unit only
Option C:	Needs a pressurizing unit and an atomizing unit
Option D:	Does not require a pressurizing & an atomizing unit at all
Q8.	Which of the following of oils is multi-grade oil?
Option A:	SAE 10W 30
Option B:	SAE 25W
Option C:	SAE 10
Option D:	SAE 20W
Q9.	In common rail system, the metering element opening period changes with the speed, thus as the speed is _____, it remains open for _____ period, making this system self-governing.
Option A:	Reduced, longer
Option B:	Reduced, shorter
Option C:	Increased, longer
Option D:	Changed, unchanged
Q10.	The voltage required to produce a spark across the gap, between the sparking point is
Option A:	2000 to 4000 Volts
Option B:	4000 to 6000 Volts
Option C:	6000 to 10,000 Volts
Option D:	10,000 to 12,000 Volts
Q11.	Cooling after compression is necessary to
Option A:	Increase the density of the air
Option B:	Increase specific volume of air
Option C:	Increase pressure of the air
Option D:	Reduce exhaust temperature
Q12.	Gudgeon pin forms the link between
Option A:	piston and big end of connecting rod
Option B:	piston and small end of connecting rod
Option C:	connecting rod and crank
Option D:	big end and small end
Q13.	Venturi in the carburettor results in
Option A:	decrease of air velocity
Option B:	increase of air velocity

Option C:	decrease of fuel flow
Option D:	increase of manifold vacuum
Q14.	During _____ any further pressure rise can be controlled by purely mechanical means, i.e. by the injection rate.
Option A:	Ignition delay period
Option B:	Uncontrolled Combustion
Option C:	Controlled Combustion
Option D:	Afterburning
Q15.	The brake power of a diesel engine, keeping other parameters constant, can be increased by
Option A:	decreasing the density of intake air
Option B:	increasing the temperature of intake air
Option C:	increasing the pressure of intake air
Option D:	decreasing the pressure of intake air
Q16.	Installation of supercharger on a four-cycle diesel engine can result in the following percentage increase in power
Option A:	Up to 25%
Option B:	Up to 50%
Option C:	Up to 80%
Option D:	Up to 100%
Q17.	Which of these is NOT a requirement of an injector nozzle
Option A:	To inject fuel at a sufficiently high pressure
Option B:	The penetration should not be high so as to impinge on cylinder walls
Option C:	Maintain the Air-Fuel ratio
Option D:	The fuel supply and cut off should be rapid
Q18.	Which of the following statement is correct regarding S.I engines
Option A:	A fine fuel spray mixed with air is ignited by the heat of compression which is at a high pressure.
Option B:	The fuel supplied to the engine cylinder is mixed with necessary amount of air and the mixture is ignited with the help of the spark plug.
Option C:	The fuel is evaporated after passing through a carburettor and is mixed with air before ignition.
Option D:	The charge is ignited by some hot surface within the engine before the passage of spark.
Q19.	Oil pressure in dry sump lubrication system is around
Option A:	5 bar – 10 bar
Option B:	11 bar – 15 bar
Option C:	3 bar – 8 bar
Option D:	1 bar
Q20.	In a cycle, the spark last roughly for

Option A:	1sec
Option B:	0.1sec
Option C:	0.01sec
Option D:	0.001sec
Q21.	The power output of hydrogen engine is limited by _____
Option A:	detonation and knocking
Option B:	pre-ignition and back flash
Option C:	pre-ignition and detonation
Option D:	detonation and back flash
Q22.	Small amount of gasoline is added to alcohol to
Option A:	reduce the emission
Option B:	to increase the power output
Option C:	to increase the efficiency
Option D:	to improve cold weather starting
Q23.	Stirling and Ericsson cycles are _____.
Option A:	reversible cycles
Option B:	irreversible cycles
Option C:	quasi-static cycles
Option D:	semi-reversible cycles
Q24.	With dissociation peak temperature is obtained
Option A:	at the stoichiometric air-fuel ratio
Option B:	when the mixture is slightly lean
Option C:	when the mixture is slightly rich
Option D:	when mixture is at high temperature
Q25.	Which of the following is not a stage of combustion in S.I engine
Option A:	Ignition Lag
Option B:	Propagation of flame
Option C:	Period of uncontrolled combustion
Option D:	Afterburning