



MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.



MUST KNOW CONCEPTS

MKC

MECH

2020-21

Course Code & Course Name : 19MEC08 Automobile Engineering

Year/Sem/Sec : III / V / A

S.No.	Term	Notation (Symbol)	Concept / Definition / Meaning / Units / Equation / Expression	Units
Unit-I : VEHICLE STRUCTURE AND ENGINES				
1	The temperature indicating instrument in vehicles indicates the temperature of		Jacket cooling water	
2	Two general types of tyres are		Tube type and tubeless	
3	In four stroke engine each cylinder has		Two valves	
4	The valve is opened as the cam lobe on the cam raises the		Valve lifter	
5	The purpose of valve clearance is to		Ensure that the valve closes fully	
6	The motion of the cam is transferred to the valves through		Rocker arms	
7	The portion of a crankshaft which rests on cylinder block is called main journal.		Yes	
8	What type of bearing is used for main bearings and connecting rod bearings		Plain bearings	
9	The oil pump is driven by the		crankshaft directly	
10	The main function of intake manifold is that it		Distributes intake air equally to the cylinders	
11	In automobiles G.V.W. refers to		gross vehicle weight	
12	The firing order for an in-line four cylinder I.C. engine is		1-3-4-2	
13	Air-fuel mixture in a spark ignition engine is too rich, then air-fuel ratio is about		10:1	
14	The operation of removing trapped air from the		Bleeding	

	hydraulic braking system is known as			
15	The most commonly used supplementary restraint system (SRS) component is		Airbag	
16	The natural gas is compressed in a CNG cylinder at a pressure of		200 bar	
17	The cetane rating of Diesel fuel is in the order of		45	
18	The cetane number of a Diesel fuel is a measure of		Delay period	
19	The valve overlap in four stroke petrol engines is approximately		30°	
20	The petrol engines are also known as		spark ignition (S.I.) engines	
21	The component that connects the steering rack to the knuckles is		tie-rod	
22	Trucks and Buses use which type of fuel?		Diesel	
23	A conventional suspension system uses which of these		Leaf Springs	
24	Sir Rudolf Diesel invented diesel engine in which year?		1913	
25	Hindustan Motors Limited, Calcutta was setup in which year?		1943	

Unit-II : ENGINE AUXILIARY SYSTEMS

26	In a Otto cycle engine, combustion occurs at		Constant volume	
27	In a Diesel cycle engine, combustion occurs at		Constant pressure	
28	Higher efficiency in Otto cycle can be achieved by		Increasing the compression ratio	
29	The expansion process in diesel engine is		Adiabatic	
30	The painting of automobiles is done to		Improve its external appearance	
31	The calorific value of petrol is about		42.7 - 43.5 MJ/kg	
32	The size of engine cylinder is referred in terms of its		Bore and stroke	
33	The number of exhaust manifolds in a V-6 engine are		Two	
34	The octane rating of petrol commercially available is		85-95	
35	The rating of C.I. engine fuel (Diesel) is given by		cetane number	
36	The temperature at which tyre inflation pressure should be checked is		Ambient temperature	

37	The calorific value of Diesel is about		42.5 MJ/kg	
38	The negative plates of a lead acid battery has		Spongy lead (Pb)	
39	The starter motor is driven by		Gear drive	
40	The octane number of compressed natural gas (CNG) is		120	
41	The compression ratio for Diesel engines usually lies in the range of		15-25	
42	In a petrol engine, the high voltage for spark plug is in the order of		22 kilovolts	
43	The piston compression rings are made o		cast iron	
44	The specific gravity of Diesel is about		0.85	
45	The service brakes employed in cars are generally operated		Hydraulically	
46	The boiling point of Diesel fuel is in the range of		180°C to 360 °C	
47	The main function of the brake fluid is		power transmission	
48	Tachometer in a vehicle measures		Engine r.p.m	
49	One effect of detonation is		Loss of power	
50	The ignition coil is used to		step up voltage	

Unit-III : TRANSMISSION SYSTEMS

51	The self ignition temperature of Diesel as compared to petrol is		lower	
52	In aluminium cylinder blocks, the cylinder liners are made of		cast iron	
53	Free pedal play in car clutches is about		25 mm	
54	The exhaust gas from petrol engine contains		Carbon monoxide	
55	The torque converter uses _____ to transfer torque.		Automatic transmission fluid (ATF)	
56	The two kinds of piston rings are		compression and oil-control rings	
57	The petrol engine works on		Otto cycle	
58	Instead of valves, the ports are used in case of		Two-stroke I.C. engines	
59	In a four speed four-stroke Diesel engine, the intake valve		Opens at 20° before T.D.C. and closes at 35° after B.D.C.	
60	The purpose of transmission in an		To vary the torque at the wheels	

	automobile is			
61	The cam shaft in an engine is always mounted		Parallel to the crankshaft	
62	Damper is also known as		Shock absorber	
63	The lower cylindrical portion of the piston which improves piston cooling performance is called		piston skirt	
64	Damper in an automobile is used to		Dissipate the energy	
65	The combustion process in a Diesel engine is a		Constant pressure process	
66	The compression ratio of a petrol engine is nearly		8:1	
67	The tyre rotation is generally done at		10000 km	
68	Two general types of tyres are		Tube type and tubeless	
69	If the engine coolant leaks into the engine oil, then engine oil		Appears milky	
70	The function of an alternator in an automobile is to		continually recharge the battery	
71	What type of bearing is used for main bearings and connecting rod bearings ?		Plain bearings	
72	The torque available at the contact between driving wheels and road is known as		Tractive effort	
73	The effect of having excess camber is		Uneven tyre wear	
74	If the air-fuel mixture ignites before the spark takes place at spark plug, the condition is called		Pre-ignition	
75	The battery is an electrochemical device, which means battery		uses chemical action to provide electricity	

Unit-IV : STEERING, BRAKES AND SUSPENSION SYSTEMS

76	Leaf springs absorb shocks by		Bending	
77	The following is a type of leaf springs		Three Quarter elliptic semi elliptic quarter ellipti	
78	The material used for making torsion bar is		Steel	
79	Spring shackles are used to join		chassis frame and spring	
80	Telescopic shock absorber consists of		Two chambers	
81	What is the angle between the steering axis and the vertical in the plane of the wheel?		Castor	

82	What is called the cornering force over the slip angle?		Cornering power	
83	On what principle does the braking system in the car work?		Frictional force	
84	Generally which brakes are on the front wheels?		Disk brake	
85	When brakes are applied on a moving vehicle; the kinetic energy is converted to		Heat energy	
86	The force required to stop a vehicle is dependent on		The weight of vehicle The deceleration rate	
87	The following is not a drum brake		Disc brake	
88	In disc brake, the disc is attached to the		Axle	
89	In vacuum brake, cylinder chamber consists of		Atmospheric valve Vacuum valve	
90	Hydraulic brakes function on the principle of		Pascal's law	
91	Tandem master cylinder consists of		Two cylinders and two reservoirs	
92	Hand brake is applicable to		Only rear wheels	
93	Servo action is to		The amplification of braking forces	
94	The power brake may be exerted by		Electrical energy	
95	The process of removing air from the brake system is known as		Bleeding	
96	The following is not a Friction clutch		Fluid clutch	
97	The following is also known as flywheel or coupling		Centrifugal clutch	
98	Clutch and friction linings are ___ to the clutch plate		Riveted	
99	The following diverts the power at right angles towards the driving wheels		Final drive	
100	Transfer case is located next to the gearbox in		Four wheel drive	

Unit-V : ALTERNATIVE ENERGY SOURCES

101	Fuel cells are		Hydrogen battery	
102	Common energy source in Indian villages is		Sun	
103	The process that converts solid coal into liquid hydrocarbon fuel is called		Liquefaction	
104	Cruid oil is		Smelly yellow to black liquid	
105	BTU is measurement of		Heat content	

106	Identify the non-renewable energy resource from the following		Coal	
107	The major cause of global population growth in the 18 and 19 centuries was		Industrial revolution	
108	Global Warming could affect		Melting of glaciers	
109	Greenhouse effect is related to		Global warming	
110	The primary cause of acid rain around the world is		Sulphur dioxide	
111	Ozone day is observed on		November 10	
112	Ozone layer thickness is measured in		Ozone layer thickness is measured in:	
113	Chlorofluorocarbon releases a chemical harmful to ozone is		Chlorine	
114	Fossil fuels" refers to		coal.,oil, natural gas	
115	The best type of coal in terms of purity is		Anthracite	
116	The main method of natural gas transportation is		Pipeline	
117	Effects of acid rain include		Deterioration of monuments. , Damage to lakes and their wildlife. Damage to vegetation	
118	Two ways to mine coal are----- and -----.		Strip mining , deep mining.	
119	An ecosystem consist of		Green plants, animals, decomposers and abiotic environment	
120	The most commonly used supplementary restraint system (SRS) component is		Airbag	
121	The cetane number of a Diesel fuel is a measure of		Delay peirod	
122	Which of the following indicates a multigrade oil		SAE 20 W-50	
123	The component that connects the steering rack to the knuckles is		Tie-rod	
124	The connecting rods are generally made of _____ shaped cross-section		I	
125	Global Warming could affect		Melting of glaciers	
Placement Questions				
126	What Is The Meaning Of Cc Of Engine		Cubic centimeter	
127	What is BHP & How it is measured?		Brake horse power	
128	If 'T' is torque(in Nm) and 'N' is speed(in rpm) then the		$2\pi NT/60000$	

	required expression for Brake power 'B.P' in kW is			
129	The force that opposes the motion of a vehicle is		Wind or air resistance	
130	Trucks and Buses use which type of fuel?		Diesel	
131	In 1832 who patented first 3-speed Transmission		W.H.James	
132	First car arrived in India in which year		1897	
133	In which year was the first automobile built?		1769	
134	Which of the following is a non-renewable resource		Coal	
135	Which among the following is not a renewable source of energy		Biomass energy	
136	Photovoltaic energy is the conversion of sunlight into		Chemical energy	
137	What is actual power delivered by the engine known as		Brake power	
138	The portion of a crankshaft which rests on cylinder block is called main journal		Yes	
139	The air resistance to a car at 20 kmph is R . The air resistance at 40 kmph will be		$4R$	
140	The size of engine cylinder is referred in terms of its		Bore and stroke	
141	The number of exhaust manifolds in a V-6 engine are		Two	
142	The stroke of an engine is the		Distance between T.D.C. and B.D.C.	
143	The starter motor is driven by		Gear drive	
144	In a petrol engine, the high voltage for spark plug is in the order of		22 kilovolts	
145	The piston compression rings are made of		Cast iron	
146	The service brakes employed in cars are generally operated		Hydraulically	
147	The materials used for cylinder block are		Cast iron and aluminium alloy	
148	Which of the following is not an automobile ?		Aeroplane	
149	The most commonly used power plant in automobiles is		I.C. engine	
150	Which of the following is not a part of the chassis ?		Seats	

