



**SIDDARTHA INSTITUTE OF SCIENCE AND TECHNOLOGY :: PUTTUR  
(AUTONOMOUS)**

Siddharth Nagar, Narayanavanam Road – 517583

**QUESTION BANK (DESCRIPTIVE)**

**Subject with Code :** AE (19ME0327)

**Course & Branch:** B.Tech - ME

**Year & Sem:** IV-B.Tech & I-Sem

**Regulation:** R19

UNIT -I					
1		Define the following terms. a) Engine b) Heat Engine c) Rear wheel drive d) Front wheel drive	L1	CO2	3 M 3 M 3 M 3 M
2	(a)	What is Combustion? Explain the different types of Combustion Process.	L1	CO1	6 M
	(b)	Explain the direct injection type combustion chamber in C.I Engine.	L2	CO1	6 M
3	(a)	Explain with neat sketch about Abnormal Combustion Process.	L2	CO1	6 M
	(b)	Define the terms Chassis, Frame & Body.	L1	CO1	6 M
4	(a)	How do you Classify the automobile engines?	L6	CO1	6 M
	(b)	Define the following terms. (i) Automobile (ii) I.C Engine (iii) E.C Engine	L1	CO1	6 M
5	(a)	Explain the different types of Combustion Chamber in S.I Engine.	L2	CO1	6 M
	(b)	Write the functions of the following engine components (i) Piston (ii) Connecting rod (iii) Crank shaft (iv) Valves (v) Cylinder	L1	CO1	6 M
6	(a)	Explain front and rear wheel drive layout in detail with relevant sketch.	L2	CO3	6 M
	(b)	List & Explain the different types of Combustion Chamber in C.I Engine	L4	CO1	6 M
7	(a)	List out the components of I.C engine and its function.	L4	CO1	6 M
	(b)	What are the materials used for the Components of I.C engine?	L1	CO1	6 M
8	(a)	How do you Classify the different types of combustion process?	L6	CO1	6 M
	(b)	Explain in detail about different types of Automobiles.	L2	CO1	6 M
9	(a)	Explain the Indirect injection type combustion chamber in C.I Engine	L2	CO1	6 M
	(b)	Explain in detail with neat sketch about Rear wheel drive in Automobile engine.	L2	CO6	6 M
10		Explain the following indirect injection type combustion chamber in C.I Engine with a neat sketch (i) Swirl Chamber (ii) Pre Combustion Chamber (iii) Air Cell or Energy Cell	L2	CO1	12M
UNIT -II					
1		(a) What is mean by emission norms? (b) What are the types of pollutants? (c) What is mean by Fuel Supply System? (d) Write any Five components used in Fuel supply system (e) Write the functions of Fuel supply system	L1	CO4	3 M 3 M 2 M 2 M 2 M
2	(a)	Explain the working of turbocharger with a neat sketch.	L2	CO1	6 M
	(b)	What are the advantages and disadvantages of turbocharger?	L1	CO1	6 M
3	(a)	Explain the various needs of alternative fuels.	L2	CO1	6 M

	(b)	What are the various types of alternate fuels available and mention their importance?	L1	CO1	6 M
4		Name various types of emissions produced from diesel and petrol engines and also mention the reasons for their production.	L6	CO4	12M
5	(a)	Explain the fuel supply system in diesel engine with line diagram.	L2	CO5	6 M
	(b)	State the necessity of Engine cooling system	L1	CO5	6 M
6		Describe the fuel supply system in petrol engine with line diagram	L2	CO5	12M
7	(a)	What is mean by Engine cooling system? List out the different types of Cooling system.	L1	CO5	6 M
	(b)	What are the National Pollution Standards of Petrol & Diesel Engines for BS-VI?	L1	CO4	6 M
8		Explain the working of three way catalytic converter with a neat sketch	L2	CO1	12M
9	(a)	Explain in detail about the CRDI engines.	L2	CO2	6 M
	(b)	Write the merits and demerits of CRDI fuel supply system	L1	CO2	6 M
10		Elucidate briefly about MPFI fuel supply system used in Automobiles with neat sketch	L2	CO5	12M
		<b>UNIT –III</b>			
1		(a) What is meant by Ignition? (b) List out the types of Ignition System (c) What is the need of Ignition System? (d) Write any Five components used in Ignition System (e) Write the functions of Ignition System	L1	CO5	3 M 3 M 2 M 2 M 2 M
2		Elucidate briefly about battery coil ignition system with a suitable sketch.	L2	CO5	12M
3		Explain with the help of a neat diagram about working of a magnetic coil ignition system.	L2	CO5	12M
4		Write the uses of various components used in Horn System.	L1	CO5	6 M
		State the necessity of Bendix Drive.	L1	CO5	6 M
5		Describe with neat sketch about Starting System in automobile	L2	CO5	12M
6		Name various types of components in Lighting System used in automobile with neat sketch	L6	CO5	12M
7		Discuss in detail about the following systems used in automobile (i)Wiper System (ii) Fuel gauge	L2	CO5	12M
8	(a)	What is the function of Engine Lubrication?	L1	CO2	6 M
	(b)	List the properties of Engine lubricants.	L2	CO2	6 M
9	(a)	Discuss the grading phenomena of Lubricants.	L2	CO2	6 M
	(b)	Explicate about any one type of Lubrication Filters.	L2	CO2	6 M
10		Explain in detail about oil filter used in lubrication system with neat diagram.	L2	CO2	12M
		<b>UNIT –IV</b>			
1		a) What is the function of fluid coupling? b) What are the main components of Transmission system? c) How front axle drive is different from rear axle drive? d) List out the uses of Propeller shaft.	L1	CO2	3 M 3 M 3 M 3 M
2		What are the different types of clutches used in an automobile? Explain any one of them with neat diagram.	L1	CO2	12M
3	(a)	What are the different functions of Clutch?	L1	CO2	6 M
	(b)	Discuss in detail about the fluid coupling.	L2	CO1	6 M
4	(a)	What are the different materials used for manufacturing of Clutch?	L1	CO2	6 M

	(b)	List out the required properties needed for material used for manufacturing of clutch	L4	CO2	6 M
5		What are the different types gear boxes used in an automobile? Explain any one of it with neat diagram	L1	CO2	12M
6	(a)	Discuss in detail about the torque converter.	L2	CO1	6 M
	(b)	Discuss about over drive in detail.	L1	CO6	6 M
7	(a)	Explain in details about Front Axle with neat diagram.	L2	CO6	6 M
	(b)	Define briefly about torque tube drive.	L1	CO6	6 M
8	(a)	Explain in details about Rear Axle with neat diagram.	L2	CO6	6 M
	(b)	Discuss in detail about propeller shaft	L2	CO1	6 M
9		Explain in details about Universal Joint with neat diagram	L2	CO1	12M
10		Explain in details about Differential used in automobile with neat diagram.	L2	CO1	12M
<b>UNIT –V</b>					
1.		(a) What are the functions of shock absorber? (b) What is the use of Steering Mechanism? (c)How air braking system is different from vacuum braking system (d) Suspension reduces the vibration. Justify	L1	CO6	3 M 3 M 3 M 3 M
2		Describe about Ackerman steering gear Mechanism with the help of a neat layout	L2	CO6	12M
3		Briefly explain about the Davi's Steering Mechanism with neat sketch	L3	CO6	12M
4		With a neat sketch, Explain the construction and working of the rigid front axle.	L5	CO6	12M
5	(a)	Elucidate about Torque Bar	L2	CO3	6 M
	(b)	Discuss about shock absorber in detail	L2	CO3	6 M
6		Explain about Rigid Axle Suspension system with the help of a neat layout	L2	CO6	12M
7		With a neat sketch, Explain the construction and working of air Braking System.	L5	CO6	12M
8		Discuss about Hydraulic Brake System with the help of line diagram.	L2	CO6	12M
9	(a)	Explain in detail about Vacuum Braking system with neat sketch	L2	CO6	6 M
	(b)	Discuss clearly how the Pneumatic braking system works.	L2	CO6	6 M
10		Answer all the following questions (i) Short notes on ABS (ii) Discuss about EBS (iii) Write the functions of Traction control	L1	CO3	4 M 4 M 4 M

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