HARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR
(AUTONOMOUS)
Siddharth Nagar, Narayanavanam Road – 517583
QUESTION BANK (DESCRIPTIVE)

Subject with Code : Automobile Engineering (16ME315) **Course & Branch**: B.Tech - ME

Year & Sem: III-B.Tech & I-Sem **Regulation:** R16

UNIT –I

1	a	Define the following terms (i) Engine (ii) Heat Engine	6 M
	b	What is the difference between real wheel drive and front wheel drive? Explain.	6 M
2	a	What is Combustion? Explain the different types of Combustion Process	6 M
	b	Explain the direct injection type combustion chamber in C.I Engine	6 M
3	a	Explain with neat sketch about Abnormal Combustion Process	6 M
	b	Define the terms Chassis, Frame & Body	6 M
4	a	How do you Classify the automobile engines	6 M
	b	Define the following terms (i) Automobile (ii) I.C Engine (iii) E.C Engine	6 M
5	a	Explain the different types of Combustion Chamber in S.I Engine	6 M
	b	Write the functions of the following engine components (i) Piston (ii) Connecting rod (iii) Crank shaft (iv) Valves (v) Cylinder	6 M
6	a	Explain front and rear wheel drive layout in detail with relevant sketch	6 M
	b	List & Explain the different types of Combustion Chamber in C.I Engine	6 M
7	a	List out the components of I.C engine and its function	6 M
	b	What are the materials used for the Components of I.C engine	6 M
8	a	How do you Classify the different types of combustion process	6 M
	b	Explain in detail about different types of Automobiles	6 M
9	a	Explain the In direct injection type combustion chamber in C.I Engine	6 M
	b	Explain in detail with neat sketch about Rear wheel drive in Automobile engine	6 M
10		Explain the following indirect injection type combustion chamber in C.I Engine	

		with Neat sketch	12 M
		(i) Swirl Chamber (ii) Pre Combustion Chamber (iii) Air Cell or Energy Cell	
		UNIT –II	
1	a	What do you know about the emission norms? Discuss	6 M
	b	Write the functions of Fuel supply system used in Automobile.	6 M
2	a	Explain the working of supercharger with a neat sketch	6 M
	b	What are the advantages and disadvantages of supercharger	6 M
3	a	Explain the various needs of alternative fuels	6 M
	b	What are the various types of alternate fuels available and mention their importance	6 M
4		Name various types of emissions produced from diesel and petrol engines and also mention the reasons for their production	12 M
5	a	Explain the fuel supply system in diesel engine with line diagram	6 M
	b	Discuss the effects of emissions on human health	6 M
6	a	Explain the difference between turbo charging and supercharger	6 M
	b	Explain the fuel supply system in petrol engine with line diagram	6 M
7	a	Explain the working of turbo charging with a neat sketch	6 M
	b	What are the advantages and disadvantages of turbo charging	6 M
8		Explain the working of three way catalytic converter with a neat sketch	12 M
9	a	Explain in detail about the CRDI engines	6 M
	b	Write the merits and demerits of CRDI fuel supply system	6 M
10		Explain briefly about MPFI fuel supply system used in Automobiles with neat sketch	12 M
		UNIT –III	
1	a	What is meant by Ignition? List out the types of Ignition System	6 M
	b	What is the need of Ignition System used in Automobile	6 M
2		Explain briefly about battery coil ignition system with a suitable sketch	12 M
3		Explain with the help of a neat diagram about working of a magnetic coil ignition system	12 M
4	a	What is mean by Engine cooling system? List out the different types of Cooling system	6 M

	b	State the necessity of Engine cooling system?	6 M
5		Explain with the help of a neat sketch about the working of Air cooling system.	12 M
6		With the help of a neat sketch, explain the working of forced circulation water cooling system.	12 M
7		What are the different types water cooling systems used in an automobile? Explain any one of it with neat diagram	12 M
8	a	What is the function of Engine Lubrications	6 M
	b	Explain the properties of Engine lubrications	6 M
9	a	Explain the grading phenomena of Lubricant	6 M
	b	Explain about any one type of Lubrication Filters	6 M
10		Explain in detail about oil filter used in lubrication system with neat diagram.	12 M

UNIT –IV

1		What is a transmission system? What are the main components of Transmission system? Explain	12 M
2		What are the different types of clutches used in an automobile? Explain any one of them with neat diagram	12 M
3	a	What are the different functions of Clutch	6 M
	b	Discuss in detail about the fluid coupling	6 M
4	a	What are the different materials used for manufacturing of Clutch	6 M
	b	List out the required properties needed for material used for manufacturing of clutch	6 M
5		What are the different types gear boxes used in an automobile? Explain any one of it with neat diagram	12 M
6	a	Discuss in detail about the torque converter	6 M
	b	Define briefly about over drive	6 M
7	a	Explain in details about Front Axle with neat diagram	6 M
	b	Define briefly about torque tube drive	6 M
8	a	Explain in details about Rear Axle with neat diagram	6 M
	b	Discuss in detail about propeller shaft	6 M
9		Explain in details about Universal Joint with neat diagram	12 M
10		Explain in details about Differential used in automobile with neat diagram	12 M

UNIT –V

1.	a	Explain about Steering Gears	6 M
	b	Discuss clearly about Steering Mechanism	6 M
2		Explain with the help of a neat layout about Ackerman steering gear Mechanism	12 M
3		Briefly explain about the Davi's Steering Mechanism with neat sketch?	12 M
4		With a neat sketch, Explain the construction and working of the rigid front axle.	12 M
5	a	Explain about Torque Bar	6 M
	b	Discuss about shock absorber in detail	6 M
6		Explain with the help of a neat layout about Rigid Axle Suspension system	12 M
7		With a neat sketch, Explain the construction and working of air Braking System.	12 M
8		Discuss briefly about Hydraulic Brake System with the help of line diagram.	12 M
9	a	Explain in detail about Vacuum Braking system with neat sketch	6 M
	b	Discuss clearly how the Pneumatic braking system works.	6 M
10		Answer all the following questions	
		(i) Define ABS?	4 M
		(ii) Define EBS	4 M
		(iii) Discuss about Traction control	4 M

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