

DHABALESWAR INSTITUTE OF POLYTECHNIC

DEPARTMENT OF MECHANICAL ENGINEERING

SUBJECT: AUTOMOBILE ENGINEERING AND HYBRID VEHICLES

Periods: 4 per week

SEMESTER: 6th

NAME OF FACULTY: S K SENAPATI

ACADEMIC YEAR: SUMMER 2022

From date: 10.03.2022

To Date: 30.06.2022

No of weeks: 15

Week	Class Day	Theory / Practical Topics
1 st	1 st	Automobiles: Definition, need and classification
	2 nd	Automobiles: Definition, need and classification
	3 rd	Layout of automobile chassis with major components (Line diagram)
	4 th	Layout of automobile chassis with major components (Line diagram)
2 nd	1 st	Manufacturer's specification of auto engines of motorcycle, scooter, car & bus one from each.
	2 nd	State the classification of engines basing on working principle, fuel used, position of cylinder,
	3 rd	arrangement of cylinder.
	4 th	Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
3 rd	1 st	Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
	2 nd	Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box, Concept of automatic gear changing mechanisms
	3 rd	Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box, Concept of automatic gear changing mechanisms
	4 th	Propeller shaft: Constructional features
4 th	1 st	Differential: Need, Types and Working principle
	2 nd	Braking systems in automobiles: Need and types.
	3 rd	Braking systems in automobiles: Need and types.
	4 th	Mechanical Brake
5 th	1 st	Mechanical Brake
	2 nd	Hydraulic brake
	3 rd	Air brake
	4 th	Air brake
6 th	1 st	Air assisted hydraulic brake
	2 nd	Air assisted hydraulic brake
	3 rd	Vacuum Brake
	4 th	Vacuum Brake
7 th	1 st	Revision
	2 nd	Wiring diagram of Horn circuit, Lighting circuit, Cut-out circuit,
	3 rd	Voltage
	4 th	current regulator circuit and Flasher circuit (Sketch and description)
8 th	1 st	State the common ignition troubles and its remedies.
	2 nd	Spark plugs: Purpose, construction and specifications
	3 rd	Description of the conventional suspension system for Rear and Front axle.
	4 th	Description of the conventional suspension system for Rear and Front axle.
9 th	1 st	Description of independent suspension system used in cars (coil spring and tension bars)
	2 nd	Description of independent suspension system used in cars (coil spring and tension bars)
	3 rd	Constructional features and working of a telescopic shock absorber

	3 rd	Constructional features and working of a telescopic shock absorber
	4 th	State tyre specifications.
10 th	1 st	Explain the causes and remedies of tyre wear.
	2 nd	Describe necessity of engine cooling.
	3 rd	Describe defects of cooling and their remedial measures.
	4 th	Describe defects of cooling and their remedial measures.
11 th	1 st	Describe the Function of lubrication.
	2 nd	Describe the Function of lubrication.
	3 rd	Describe the lubrication System of I.C. engine.
	4 th	Describe the lubrication System of I.C. engine.
12 th	1 st	Fuel and Ignition system: For petrol Engine:
	2 nd	Revision
	3 rd	Describe carburetion and Air fuel ratio.
	4 th	Describe carburetion and Air fuel ratio.
13 th	1 st	Describe the Battery ignition and Magnet ignition system.
	2 nd	Describe the Battery ignition and Magnet ignition system.
	3 rd	Revision
	4 th	Describe Multipoint fuel injection system
14 th	1 st	Describe Multipoint fuel injection system For Diesel engine:
	2 nd	Describe Multipoint fuel injection system For Diesel engine:
	3 rd	Describe the working principle of Fuel feed pump
	4 th	Describe the working principle of Fuel feed pump
15 th	1 st	Injector and Fuel filter
	2 nd	Describe the working principle of fuel injection system for multi cylinder engine.
	3 rd	Describe the working principle of fuel injection system for multi cylinder engine.
	4 th	Revision

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