SIDDHARTH INSTITUTE OF SCIENCE AND TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
Siddharth Nagar, Narayanavanam Road – 517583
QUESTION BANK (DESCRIPTIVE)

Subject with Code : AE (18ME0325) **Course & Branch**: B.Tech - ME

Year & Sem: IV-B.Tech & I- Sem **Regulation:** R18

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

		with Neat sketch (i) Swirl Chamber (ii) Pre Combustion Chamber (iii) Air Cell or Energy Cell	10M
		UNIT –II	
1	a) b) c) d) e)	What is mean by emission norms? What are the types of pollutants What is mean by Fuel Supply System Write any Five components used in Fuel supply system Write the functions of Fuel supply system	2 M 2 M 2 M 2 M 2 M
2	a)	Explain the working of supercharger with a neat sketch	5 M
	b)	What are the advantages and disadvantages of supercharger	5 M
3	a)	Explain the various needs of alternative fuels	5 M
	b)	What are the various types of alternate fuels available and mention their importance	5 M
4		Name various types of emissions produced from diesel and petrol engines and also mention the reasons for their production	10 M
5	a)	Explain the fuel supply system in diesel engine with line diagram	5 M
	b)	Discuss the effects of emissions on human health	5 M
6	a)	Explain the difference between turbocharging and supercharger	5 M
	b)	Explain the fuel supply system in petrol engine with line diagram	5 M
7	a)	Explain the working of turbocharging with a neat sketch	5 M
	b)	What are the advantages and disadvantages of turbocharging	5 M
8		Explain the working of three way catalytic converter with a neat sketch	10 M
9	a)	Explain in detail about the CRDI engines	5 M
	b)	Write the merits and demerits of CRDI fuel supply system	5 M
10		Explain briefly about MPFI fuel supply system used in Automobiles with neat sketch	10 M
		UNIT –III	
1	a) b) c) d) e)	What is meant by Ignition? List out the types of Ignition System What is the need of Ignition System Write any Five components used in Ignition System Write the functions of Ignition System	2 M 2 M 2 M 2 M 2 M

2		Explain briefly about battery coil ignition system with a suitable sketch	10 M
3		Explain with the help of a neat diagram about working of a magnetic coil ignition system	10 M
4	a)	What is mean by Engine cooling system? List out the different types of Cooling system	5 M
	b)	State the necessity of Engine cooling system?	5 M
5		Explain with the help of a neat sketch about the working of Air cooling system.	10 M
6		With the help of a neat sketch, explain the working of forced circulation water cooling system.	10 M
7		What are the different types water cooling systems used in an automobile? Explain any one of it with neat diagram	10 M
8	a)	What is the function of Engine Lubrications	5 M
	b)	Explain the properties of Engine lubrications	5 M
9	a)	Explain the grading phenomena of Lubricant	5 M
	b)	Explain about any one type of Lubrication Filters	5 M
10		Explain in detail about oil filter used in lubrication system with neat diagram.	10 M
		UNIT –IV	
1	a) b) c) d) e)	What is mean by transmission system? What are the main components of Transmission system? What are the different types of clutches Write the functions of clutches What are the main components of clutches?	2 M 2 M 2 M 2 M 2 M
2		What are the different types of clutches used in an automobile? Explain any one of them with neat diagram	10 M
3	a)	What are the different functions of Clutch	5 M
	b)	Discuss in detail about the fluid coupling	5 M
4	a)	What are the different materials used for manufacturing of Clutch	5 M
	b)	List out the required properties needed for material used for manufacturing of clutch	5 M

5		What are the different types gear boxes used in an automobile? Explain any one of it with neat diagram	10 M
6	a)	Discuss in detail about the torque converter	5 M
	b)	Define briefly about over drive	5 M
7	a)	Explain in details about Front Axle with neat diagram	5 M
	b)	Define briefly about torque tube drive	5 M
8	a)	Explain in details about Rear Axle with neat diagram	5 M
	b)	Discuss in detail about propeller shaft	5 M
9		Explain in details about Universal Joint with neat diagram	10 M
10		Explain in details about Differential used in automobile with neat diagram	10 M
		UNIT –V	
1.	a) b) c) d) e)	Define Steering Gears Define Steering Mechanism Write the Types of Steering Mechanisms Define Mechanism Write the functions of Steering Gears	2 M 2 M 2 M 2 M 2 M
2		Explain with the help of a neat layout about Ackerman steering gear Mechanism	10 M
3		Briefly explain about the Davis Steering Mechanism with neat sketch?	10 M
4		With a neat sketch, Explain the construction and working of the rigid front axle.	10 M
5	a)	Explain about Torque Bar	5 M
	b)	Discuss about shock absorber in detail	5 M
6		Explain with the help of a neat layout about Rigid Axle Suspension system	10 M
7		With a neat sketch, Explain the construction and working of air Braking System.	10 M
8		Discuss briefly about Hydraulic Brake System with the help of line diagram.	10 M
9	a)	Explain in detail about Vacuum Braking system with neat sketch	5 M
	b)	Discuss clearly how the Pneumatic braking system works.	5 M
10	 a) b) c)	Answer all the following questions Define ABS? Define EBS Discuss about Traction control	 3 M 3 M 4 M

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BIT BANK (OBJECTIVE)

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UNIT -I

1 Most of the mopeds in India have a capacity of

(A) 10 cc (B) 20 cc (C) 50 cc (D) 150 cc **[C]**

2 Which motor cycle has maximum power rating

(A)Jawa (B) Yamaha (C)Rajdoot (D) Bullet **[B]**

3 The part of the vehicle which holds the passenger and the cargo to be transported is known as

(A) Chassis (B) Cabin (C) Aft (D) Hull **[D]**

4 The commercial vehicle, the engine is located forward or rear, mainly to

(A) Better Utilization of space (B) Better weight distribution
(C) Reduce the weight of chassis (D) Minimize the tendency of overturn **[B]**

5 The square type engine has

(A) Square type geometrical shape
(B) Two cylinders vertical and two cylinders horizontal
(C) Cylinder bore equal to stroke length
(D) Has 4-cylinders with phase drift of 90 degrees **[C]**

6 The general form of connecting rod is

(A) Forged square section (B) Forged I section
(C) Forged round section (D) Casted I section **[B]**

7 In multi cylinder engine, as the cylinder number increases, the power to weight ratio

(A) Decreases (B) increases
(C) remains same (D) it has nothing to do with no.of cylinders **[A]**

8 An opposed cylinder engine has

(A) One crank shaft and one cam shaft (B) One crank shaft and two cam shaft
(C)Two crank shafts and two cam shafts (D) 2 crank shafts and 1 cam shaft **[C]**

9 In 4 stroke multi-cylinder engine, each cylinder has

(A) Two valves(B) One valve(C)Four valves(D) Three valves **[A]**

10 Engine Dynamo is usually driven by

(A) Chain drive (B)Gear drive (C)Flat belt drive (D) V-belt drive **[D]**

11 Diesel engine is generally preferred for road transport because of low

(A)Capital cost (B)Operating cost (C) Manufacturing cost(D) Maintenance cost **[B]**

12 Starting motor is generally driven by

(A) Chain drive (B)Gear drive (C)Flat belt drive (D)V-belt drive **[B]**

13 The device for smoothing out the power generation from the engine is known as

(A)Gear box (B)Governor (C)Flywheel (D)Differential **[C]**

14 Which vehicle is provided with 4 wheel drive

(A)Ambassador car (B)Metador (C)Jeep (D)Standard wagon **[C]**

15 In 4 wheel drive, the no.of gear boxes used is

(A)One(B)Two (C)Three (D)One gear box with more gears **[B]**

16 Two speed reverse gear arrangement is provided in case of

(A)Car (B)Metador (C)Jeep (D)Standard wagon **[B]**

17 Which of the following is mounted between the engine and gear box

(A)Propeller shaft (B)Clutch(C)Differential (D)Cooling fan **[B]**

18 The firing order in case of 4 cylinder inline engine

(A)1-2-4-3 (B)1-3-4-2 (C)1-4-3-2 (D)Any one of three **[C]**

19 In case of 4 cylinder opposed cylinder engines, the firing order is

(A)1-3-4-2 (B)1-3-4-2 (C)1-4-3-2 (D)1-2-4-3 **[C]**

20 In case of 4 cylinder inline engine the no. of power strokes are

(A)One (B)Two(C)Three (D)Four **[B]**

21 The no. of exhaust manifold in V-8 engine is

(A)One (B)Two (C) Four (D)Eight **[B]**

22 Which part is not common in S.I and C.I engines

(A)Air cleaner(B)Dynamo(C)Silencer (D)Fuel injector **[D]**

23 The purpose of dynamo in the 4 wheeler automobile is

(A)To supply electric power(B)To convert mechanical energy in to electrical energy
(C)To charge the battery continuously(D) Act as reservoir of electrical energy **[C]**

24 The purpose of crankcase ventilation is

(A)To cool the lubrication oil(B)To remove water and oil vapours from the crank case (C)To maintain viscosity of oil(D) All of the above **[D]**

25 The cooling system of automobile engine is most simple when the engine is placed at the

(A)Front (B) Rear right (C)Rear left(D)Centre **[A]**

26 The basic automobile section consists of suspension systems, axles, wheels and

(A)Steering (B) Brakes(C)Frame (D)Lights **[C]**

27 The purpose of gear box in automobile is to

(A)Vary torque (B)Vary speed
(C)To disconnect the fly wheel from engine(D)To change speed permanently **[A]**

28 The purpose of the four wheel drive is

(A) Clutch operation is simplified (B)Road adhesion is increased
(C) Road adhesion is decreased (D)Cooling of engine is simplified **[B]**

29 Most of the two wheelers in India have the capacity of

(A)50 cc (B)100 cc (C)150 cc (D)200 cc **[B]**

30 Which one of the following is not a part of the chassis

(A)Wheels (B) Seats (C) Front axle (D) Rear axle **[B]**

31 Which vehicle is generally provided with four wheel drive

(A)Ambassador car (B)Jeep (C)Wagon (D)Metador **[B]**

32 Which one of the following is mounted between the engine and gear box

(A)Propeller shaft (B)Clutch (C)Differential (D) None of the above **[B]**

33 Which transmission unit disengages the drive and provides smooth take up of the drive

(A)Clutch (B)Gear box (C)Differential (D) Propeller **[B]**

34 The distance between the centres of the front wheel is known as

(A)Track (B)Axle width (C)Wheels base (D) Turning circle **[A]**

35 The unit of brake power of engine is

(A) kW (B)kN (C)kPa (D)kNm **[A]**

36 The maximum pressure in a petrol engine having compression ratio is about

(A)5 bar (B) 55 bar (C)50 bar(D) 100 bar **[B]**

37 The car engine is usually

(A) Single cylinder(B)4-cylinder inline(C)Twin cylinder (D)Two cylinder V-type **[B]**

38 In a 6-cylinder engine, the power stroke occurs after ------ degree of crank rotation

(A)90 (B)120(C) 180(D) 360 **[B]**

39 Firing order of a 6-cylinder engine is usually

(A)1-5-3-6-2-4 (B) 1-6-3-5-2-4(C)1-3-6-2-4-5 (D)1-4-3-2-6-5 **[B]**

40 Petrol engine works on

(A)Otto cycle (B) Rankine cycle (C) Diesel cycle(D) Striking cycle **[A]**

41 The following is (are) the type(s) of supercharger(s)

(A) Roots type(B) Centrifugal type(C) Vane type(D) All of the above **[D]**

UNIT– II

1 The fuel injection starts in diesel engine when the piston **[C]**

(A)Reaches to TDC after compression stroke ends
(B)At BDC before starting the compression stroke
(C)Approaching TDC during compression stroke
(D)After TDC and after the completing the compression stroke

2 In a diesel engine, the time period between the time of injection and the time of ignition is known as **[D]**

(A) Spill cut-off (B)Period of injection (C)Period of ignition (D)Delay period

3 In a single jet carburetor, the A:F ratio of the mixture with increasing speed **[B]**

(A)Increases(B) Decreases (C) Remains constant (D)None is correct

4 The A:F mixture of the mixture supplied by the starting jet is: **[B]**

(A)To maintain the A:F ratio constant (B)Make the mixture rich
(C) Stoichiometric(D)None of correct

5 The following is used as fuel in IC engines **[D]**

(A) Liquefied petroleum gas (B)Methanol (C) Benzol (D) All of the above

6 Petrol or Gasoline is obtained from crude petroleum by means of **[C]**

(A) Distillation (B)Cracking (C) both A and B (D) None of the above

7 Petrol for automobiles engines has boiling point range from about **[A]**

(A) 37°C to 204°C (B) 27°C to 104°C (C) 37°C to 104°C (D) 27°C to 204°C

8 The following additive prevent the formation of gum while the petrol is in storage **[A]**

(A) Oxidation inhibitors(B) Metal deactivators(C) Rust resistors(D) Ice resistors

9 The following is the chemical formula for petrol **[B]**

(A) C7H16 (B) C8H18 (C) C9H20 (D) C10H22

10 The function(s) of carburetor is to **[D]**

(A) atomizes and vaporizes fuel (B) mix petrol and air in correct proportion
(C) supply fuel air mixture to the engine(D) all of the above

11 In multipoint fuel injection (MPFI) there are ____ injectors for six cylinder engine **[D]**

(A) One (B)Two (C)Three (D)Six

12 Fuel injection system is the system which injects fuel into the combustion chamber of a diesel engine when the piston reaches near **[A]**

(A) Top dead centre (B) Bottom dead centre
(C) In between top dead centre and bottom dead centre (D) Any of the above

13 Following is the correct order in which fuel is injected **[A]**

(A) Fuel tank – Fuel filter – Fuel feed pump – Fuel injection pump – injector
(B) Fuel tank – Fuel feed pump – Fuel filter – Fuel injection pump – injector
(C) Fuel tank – Fuel filter – Fuel injection pump – Fuel feed pump – injector
(D) Fuel tank – Fuel injection pump – Fuel filter – Fuel feed pump – injector

14 The following is (are) the type(s) of nozzle tip employed in injectors **[D]**

(A) Single hole (B) Multiple hole (C)Pintle orifice (D) all of the above

15 The following is not an injector fault **[D]**

(A) Nozzle wetness (B) Blue nozzle body (C) Excessive leak off (D) Blow holes

16 Glow plugs are used in diesel engine for **[A]**

(A)Easy startup of engine (B) Providing light inside the combustion chamber
(C)Fuel injection (D) all of the above

17 The type of reflector used for automobile head lamp **[A]**

(A)Parabolic(B)Hyperbolic (C) Spherical (D) Circular

18 For aiming the head lights, the distance between the lights and screen should be **[D]**

(A)1.9 m (B)3.8 m (C)7.6 m (D)9.5 m

19 The colour of tail light in the car is **[D]**

(A)White (B)Yellow (C)Green (D)Red

20 Photochemical smog is formed by the emission of **[D]**

(A)HC (B)CO (C)SO2 (D)Nox

21 CO is generated when the engine runs on **[B]**

(A)Lean mixture (B)Rich mixture (C)Stoichiometric mixture (D)Cruising speed

22 Blow by gases are emitted from **[C]**

(A) Carburetor (B)Fuel tank (C)Crank case (D)Tail pipe

23 All 3 gases (HC,CO,NOx) are removed **[C]**

(A)Oxidation converter (B)Reduction converter (C)3 way converter
(D) None of the above

24 The colour of the positive plate lead acid battery is **[D]**

(A) White (B)Gray (C)Black (D)Brown

25 The colour of the negative plate lead acid battery is **[A]**

(A)White (B)Gray (C)Black (D)Brown

26 The capacity of the battery is determined by the no. of plates per cell **[B]**

(A)Number of cells (B)Size of the blades
(C)Shape of the plates (D)Number of separators

27 The number of positive plates in lead acid battery cell is **[A]**

(A)One less than negative plates (B)One more than negative plates
(C)Equal to negative plates (D)Two more than negative plates

28 With an decrease in temperature, the specific gravity of electrolyte **[A]**

(A)Increases (B)Decreases (C) No effect (D) None of these

29 A 12 V lead –acid battery consists of **[B]**

(A)Three cells in parallel (B) Three cells in series
(C)6- cells in parallel (D)6-cells in series

30 A fully charged 6-cell should indicate **[D]**

(A)12V (B)12.6V (C)Specific gravity 1.29 (D) Both B and C

31 The most widely used fuel supply system for a car engine is **[B]**

(A) Gravity system (B)Pump system (C)Pressure system (D)Vacuum system

32 The drive for the mechanical fuel pump is taken from **[A]**

(A)Crank shaft (B)Cam shaft (C) Distributor shaft (D) Any of these

33 The pressure of the fuel supplied by fuel pump to S-I engine is **[B]**

(A)3KPa (B)30 KPa (C)100 KPa (D)300 Kpa

34 The carburetor provides correct A:F mixture during **[D]**

(A) Starting (B) Accelerating (C) Normal running (D)All conditions

35 The venture of a carburetor cause to **[A]**

(A) Increase in air velocity (B) Decrease in fuel flow
(C) Decrease in air velocity (D) Decrease in manifold vacuum

36 The throttle valve controls the supply of **[C]**

(A)Air only (B) Fuel only (C) Mixture (D) None of these

37 The most accurate petrol injection system is **[C]**

(A)Direct injection (B) Manifold injection
(C) Port injection (D) throttle body injection

38 In same diesel engines ,the injection pressures is as high as **[A]**

(A)100 bar (B)200 bar (C)300 bar (D)400 bar

39 The opening pressure of hole type nozzle varies from **[C]**

(A)5-10 MPa (B)10-25 MPa (C)15-30 MPa (D) 25 to 55MPa

40 It is common for the diesel engine to emit excessive smoke during **[C]**

(A) Starting (B) Idling (C) Acceleration (D) Deceleration

UNIT–III

1 The inertia of the rotating parts of the clutch should be **[B]**

(A)Maximum (B)Minimum (C)Zero (D)None of these

2 The co-efficient of friction for the clutch facing material **[C]**

(A) 0.1 (B)0.2 (C)0.3 (D)0.6

3 The maximum value of axial force which can be applied by the driver at the clutch without getting fatigues is approximately **[B]**

(A) 10 N (B)100 N (C)500 N (D)5000 N

4 The maximum intensity of pressure which can be applied on clutch facing without damage is **[B]**

(A)10 N (B)100 N (C)200 N (D)500 N

5 The clutch is located between the gear box and the **[A]**

(A)Engine (B)Propeller shaft (C)Rear axle (D)Differential

6 The part of the cover assembly that holds the pressure plate against the clutch plate is **[C]**

(A)Struts (B)Release lever (C) Spring (D)Bearing

7 The cushioning spings in clutch plate are used to reduce **[B]**

(A)Vibrations (B)Jerks (C)Vehicle speed (D)None of these

8 The thrust bearing should come in contact with release lever when the **[C]**

(A)Vehicle is moving very slow (B)Vehicle is moving very fast
(C)Clutch pedal is pressed (D)None of these

9 Which one of the following is located between the engine and gear box **[A]**

(A)Clutch (B)Differential (C)Propeller shaft (D)None of these

10 Clutch slippage when the clutch is engaged is particularly noticeable **[D]**

(A)At low speed (B)Idling (C)Accelerating (D)Braking

11 Which one of the following is the trouble due to clutch **[C]**

(A)Dragging (B)Grabbing (C) Slipping (D)All of these

12 The common clutch used between the engine and synchromesh gear box is **[B]**

(A)Cone (B)Single plate(dry) (C)Multiplate wet (D)Electromagnetic

13 The pedal play in the car clutch is about **[C]**

(A)5 mm (B)25 mm (C)50 mm (D)100 mm

14 The following is not a Friction clutch **[A]**

(A) Fluid clutch (B) Centrifugal clutch (C) Cone clutch (D) Disc clutch

15 The following is known as positive clutch **[C]**

(A) Single plate clutch (B) Cone clutch (C) Dog clutch (D) Centrifugal clutch

16 The following type of arrangement is used in synchromesh type gear box **[C]**

(A) Single plate clutch (B) Fluid clutch
(C) Dog clutch (D) Semi-centrifugal clutch

17 The torque which a clutch can transmit, depends upon the **[D]**

(A)Coefficient of friction (B) Spring force
(C)Contact surfaces (D)All of the above

18 In Disc clutch, the clutch disc acts as a **[B]**

(A)Driving member (B)Driven member
(C)Neutral member (D) any of the above

19 In Disc clutch, engine flywheel acts as a
(A)Driving plate (B)Driven plate (C)Pressure plate (D)None of the above **[A]**

20 The following type of springs are employed in the pressure plate **[C]**

(A) Coil springs (B) Diaphragm type conical spring
(C)Both (A) and (B)(D)None of the above

21 The following is an automatic clutch which is controlled by engine speed **[B]**
(A) Cone clutch (B) Centrifugal clutch
(C) fluid clutch (D) Disc clutch

22 The following is also known as flywheel or coupling **[A]**
(A) Centrifugal clutch (B) Fluid clutch
(C) Cone clutch(D) All of the above

23 Clutch and friction linings are ___ to the clutch plate **[A]**
(A)Riveted (B) Welded (C) Bolted (D) any of the above

24 The following is (are) the type(s) of clutch linings
(A) Solid woven (B)Moulded type (C) Laminated (D) all of the above **[D]**

25 The following is (are) the advantage(s) of fluid flywheel **[D]**
(A) It gives a smoother power take up than centrifugal type
(B) fluid acts as a cushioning agent
(C) it needs no separate pedal or lever to operate it
(D) all of the above

26 The purpose of the transmission in automobile is **[C]**
(A)To vary the speed (B)To vary the power
(C)To vary the torque (D)All the above

27 By using synchronizing device, the two adjacent gears have their speeds **[D]**
(A)Increased (B)Reduced (C)Unequalized(D)Equalized

28 In simple planetary gear, the member for increasing the torque is always **[C]**
(A)Ring gear (B)Sun gear (C)Planet carrier (D)None of the above

29 In simple epicyclic gear, the output member to increase the torque is always
(A)Sun gear (B)Ring gear (C)Planet gear (D)None of the above **[B]**

30 The central gear in Epicyclic gear set is known as **[A]**
(A)Sun gear (B)Ring gear (C)Planet gear (D)None of the above

31 The component in the torque-converter which allows multiplication of the torque is **[B]**
(A)Pump (B) Stator (C)turbine (D)impeller

32 The component in the torque-converter that drives the oil is **[C]**
(A) Turbine (B) Stator (C) Impeller (D)Freewheel

33 The component in the torque-converter that redirects the flow of oil to the impeller is **[B]**
(A) Turbine (B) Stator (C) Impeller (D)Freewheel

34 Which transmission unit disengages the drive and provides a smooth take up of the drive
(A)Clutch (B)Gear-box (C)Differential (D)Final drive **[A]**

35 The function of universal joint is to allow propeller shaft **[C]**
(A)Change the length (B)Change the inclination
(C)Transfer the torque at an angle (D)None of the above

36 Two piece propeller shaft requires
(A)One universal joint (B)The shaft to be solid **[C]**
(C)Central support bearing(D)None of the above

37 The inner end of the axle shaft is splined to the **[A]**
(A)Sun gear (B)Planet pinion(C)Crown wheel(D) Differential Gauge

38 The smallest gears inside the differential casing are **[A]**
(A)Pinion gears (B)Sun gears(C)Side gears (D)Ring gears

39 The type of rear axle used on trucks is **[B]**
(A)Semi-floating (B)Fully floating
(C)Three quarter floating(D)Any one of the three

40 The crown wheel and pinion is called **[C]**
(A)Differential (B)Rear axle (C)Final drive (D)None of the above

UNIT –IV

1 Most proper manual steering system is **[D]**

(A) Cam and roller type (B)Worm and Worm wheel type
(C)Recirculating ball type(D)Rack and pinion type

2 The steering ratio for manual steering is approximately **[A]**
(A)50 (B)100 (C)20 (D)15

3 One purpose of recirculating ball type steering gear is to reduce **[B]**

(A)Toe-out during turning (B)Operating friction
(C)Operating cost (D)None of the above

4 The gear rack in rack and pinion steering gear is attached **[A]**

(A)Tie rod (B)Pit man axis (C)Relay rod (D)Crank shaft

5 The steering gear used in maruti 800 car is **[C]**

(A)Worm and worm wheel sector (B)Worm and roller
(C)Rack and pinion (D)Worm and nut

6 The angle formed by the wheel with vertical when the top of the wheel slants outward is called **[C]**

(A)Positive caster (B)Negative caster (C)Positive camber (D)Negative camber

7 The angle formed by the line joining the stab axle steering arm joints the vertical and this line slants forward at the top is called **[B]**

(A)Positive camber(B)Negative camber(C)Positive caster (D)Negative caster

8 Another name for steering link rod **[B]**

(A)Track rod (B) Drag link (C)Tie rod (D)Pitman rod

9 In recirculating ball type steering gear, the ball travels between the ball nut and the **[A]**

(A)Worm shaft (B)Worm wheel (C)Gear rack (D)Steering wheel shaft

10 Car using rack an pinion steering gear, the gear rock is attached **[A]**

(A)Relay rod (B)Tie rod (C)Cross shaft (D)Pitman axis

11 The inward tilt of king pan is called **[B]**

(A)Caster (B)Camber (C)King-pin installation (D)Toe-out

12 The include angle is the sum of the **[D]**

(A)Caster and camber (B)Caster and toe
(C)Camber and SAI (D)Caster and SAI

13 The cornering force dividing by slip angle is **[B]**

(A)Self-righting torque (B)Cornering power
(C)Pneumatic torque (D)None of the above

14 On the coaxial steering gear, the gear housing is lubricated **[A]**

(A)From the hydraulic system (B)From the pneumatic system
(C)From the worm housing (D)None of the above

15 In the linkage of power steering system, the swinging end of pitman arm **[B]**

(A)A spool valve (B)A tie rod(C)Connecting rod (D)An idler lever

16 In the constant control power steering unit a spool valve is moved by **[B]**

(A)A pivot lever (B)A valve rotor (C)A tie rod (D)A connecting rod

17 In a coaxial power steering unit, the spool valve **[A]**

(A)Rotates (B)Moves end wise (C) Moves front wise(D) Revolves

18 In the Saginaw in line power steering unit, the valve spool is centered in neutral by **[D]**

(A)Centering springs (B)Oil pressure (C)Middle spring(D)Torsion bar

19 In the steering gear of the linkage connecting to the wheel, steering knuckle, a gear sector, stud or toothed roller is meshed with **[A]**

(A)Worm (B)A ball bearing (C)Journal bearing (D)Gear

20 The steering gear is a device for converting the rotary motor of the steering wheel in to **[A]**

(A)To and fro movement (B)Up and down movement
(C)Left to right movement (D)None of these

21 In the steering gear, a gear sector or toothed roller is meshed with **[A]**

(A)Worm (B)Ball bearing (C)Steering wheel (D)Connecting rod

22 The only time the steering wheel requires replacement would be **[B]**

(A)Wheel bearing displacement (B)An accident
(C)Both (A) and (B)(D)None

23 The only service that a steering linkage normally requires is **[B]**

(A)Tie-rod adjustment (B)Lubrication (C)Both (A) and (B)(D)None

24 In a pitman arm in the steering gear is linked with front wheels through **[C]**

(A)Worm (B) Steering wheel (C)Steering shaft (D)None

25 Toe-in is adjusted by **[B]**

(A)Adding or removing shims (B)Changing the effective length of tie rods
(C)Both (D)None

26 The backward tilt of the center line of ball joints from the vertical is called **[A]**

(A)Positive caster(B) Negative caster (C)Negative camber(D)Positive camber

27 The point at which the center line of the wheel and the centre line ball joints cross is called the point of **[A]**

(A)Intersection (B)Departure (C)Both (A) and (B)(D)None

28 When the top of the king pin is tilted towards the driver, the phenomenon is known as **[B]**

(A)Negative caster (B)Positive Caster (C)Skidding (D) Camber

29 When the front wheels are not parallel to each other and moved further away at the top, it is termed **[A]**

(A) Positive camber (B)Negative caster (C)Negative camber (D)Roll out

30 Positive caster tends to make the front wheels **[A]**

(A) Toe- in (B) Toe- out (C) Camber (D) Caster

31 Tilting of the front wheels away from the vertical is called **[A]**

(A)Camber (B) Caster (C) Toe-out (D)None

32 Caster action on the front wheels of a vehicle will **[C]**

(A) Make it easier to take corners(B)Reduce the load on the king pin
(C) Enable the driver to feel straight wheel position(D)None

33 In front end geometry factors that are involved include **[A]**

(A)Camber (B) Caster(C) Toe-out (D)None

34 Toe-out on turns means that the right wheel in a right hand turn would turn-out or away from straight ahead **[A]**

(A) More than the left wheel (B) Less than the left wheel
(C)Both (A) and (B)(D)None

35 Positive caster will tend to cause the car to **[A]**

(A)Roll out on turns (B) Bank on turns (C)Both (A) and (B)(D)None

36 The backward tilt of the king pin from the vertical is called **[B]**

(A) Positive caster (B) Negative caster(C)Negative camber (D)None

37 When the point of intersection of the centre line of the wheel and the centre line of the king pin cross is below the road surface, then the front wheel will tend to **[A]**

(A) Toe-out (B)Toe - in (C)Both (A) and (B)(D)None

38 The tilting of the front wheels away from the vertical is called **[A]**

(A) Camber (B)Caster (C) Toe-out (D)None

39 Camber angle plus king pin inclination angle is called the **[B]**

(A)Caster (B)Included angle(C)Toe-out (D)None

40 The Ackermann steering layout **[A]**

(A) Makes for safer driving(B)Enables the driver to feel ahead position
(C) Reduces load on the kingpins and stub axles (D) None

UNIT –V

1 The function of the stabilizer in automobile suspension system is to decrease the tendency to **[D]**

(A) Roll (B) Dip (C) Yan (D) Pitch

2 Another name for damper **[A]**

(A) Strut rod (B) Stabilizer bar (C)Pan rod (D)Radius rod

3 The function of shock absorber is **[C]**

(A) To absorb the energy(B) To release the energy
(C) To dissipate the energy(D) To generate the energy

4 The spring commonly used in heavy duty automobile **[D]**

(A) Coil spring (B)Elliptic leaf spring (C)Plastic spring (D)Semi-elliptic leaf spring

5 The common provision made to allow a leaf spring to vary its length **[A]**

(A)Swinging shakle(B)Rubber U bolt
(C)Spline in the spring eye (D)None of the above

6 Automobile ride will be comfortable when **[A]**

(A)Unspring weight is minimum (B)Vehicle weight is minimum

(C)Spring weight is minimum (D)All the above

7 Maximum room in the engine compartment is provided with **[C]**

(A)Wishbone type suspension (B)Rigid axle suspension
(C)McPherson strut suspension (D)None of the above

8 When brakes are applied on a moving vehicle; the kinetic energy is converted to **[B]**

(A) Mechanical energy (B) Heat energy
(C) Electrical energy(D) Potential energy

9 The force required to stop a vehicle is dependent on **[C]**

(A)The weight of vehicle (B)The deceleration rate
(C) both (A) and (B)(D) None of the above

10 The following is not a drum brake **[C]**

(A) External contracting brake (B) Internal expanding brake
(C) Disc brake (D) All of the above

11 The hand brake of the automobile is usually **[A]**

(A) External contracting brake (B)Internal expanding brake
(C) Disc brake (D) All of the above

12 In disc brake, the disc is attached to the **[B]**

(A)Wheel (B)Axle (C) Suspension system (D)None of the above

13 The mechanical brakes are operated by means of **[D]**

(A)Levers (B) Bell cranks (C) Cams (D)All of the above

14 In vacuum brake, cylinder chamber consists of **[C]**

(A)Atmospheric valve (B)Vacuum valve
(C)Both (A) and (B)(D) None of the above

15 Hydraulic brakes function on the principle of **[C]**

(A) Law of conservation of momentum(B) Law of conservation of energy
(C) Pascal's law (D) None of the above

16 The function of master cylinder in hydraulic brakes is to **[D]**

(A) builds up hydraulic pressure to operate the brakes
(B) maintains constant volume of fluid in the system
(C) serves as a pump to force air out of the hydraulic system
(D) All of the above

17 Tandem master cylinder consists of **[D]**

(A) One cylinder and one reservoir (B)Two cylinders and one reservoir
(C) One cylinder and two reservoirs (D)Two cylinders and two reservoirs

18 Hand brake is applicable to **[B]**

(A) Only front wheels (B)Only rear wheels
(C)Both front and rear wheels (D)All of the above

19 The following factors contribute to the effectiveness of the brakes **[D]**

(A) Area of brake linings (B) Radius of car wheel
(C) Amount of pressure applied to shoe brakes (D) All of the above

20 Servo action is to **[A]**

(A)The amplification of braking forces
(B) Increase force of friction between shoe and wheel
(C) Transfer of weight during stop
(D)All of the above

21 The power brake may be exerted by **[A]**

(A)Electrical energy (B) Engine vacuum(C)Air pressure (D)All of the above

22 The process of removing air from the brake system is known as **[A]**

(A)Bleeding (B) Self – Energizing(C)Servo action(D)Energization

23 Brake fade is **[B]**

(A)Loss of pedal (B)Loss of friction (C)Loss of fluid (D)None of these

24 Fading in brakes occurs **[C]**

(A)High speed (B)Low speed (C)Continuous operation (D)Brake lining warnout

25 Brakes in car are usually operated **[B]**

(A)Mechanically (B)Hydraulically (C)By compressed air(D)By engine vacuum

26 The brake bleeding generally removes from the system **[A]**

(A)Air (B)Excess fluid (C)Vacuum (D)Excess pressure

27 Hydraulic brakes are commonly used with **[D]**

(A)Trucks (B)Jeep (C) Cars (D) All of the above

28 Air brakes are mostly used in **[A]**

(A)Trucks (B)Cars (C)Jeeps (D)Three-wheelers

29 Hand brakes are generally operated on **[A]**

(A)Rear wheels (B)Front wheels (C)All the wheels (D)Any one

30 If the pedal of hydraulic braking system gives spring action, it indicates that **[A]**

(A)System contains air (B)Shoe clearance is increased
(C) System is in good condition (D) Fluid lost its properties

31 The brake lining mainly consists of **[D]**

(A)Cast iron (B) Copper (C)Aluminum(D)Asbestos

32 The proportioning value is not working when **[A]**

(A)Front brakes locked (B)Rear brakes locked
(C)Front brakes dragging(D) Rear brakes dragging

33 Anti-skid devices are generally used on **[C]**

(A)Rear brakes (B)Parking brakes (C)Front brakes (D)None of these

34 In Maruti car brakes used are **[D]**

(A)Disc brakes only (B)Drum brakes only
(C)Drum on front and disc on rear(D)Disc on front and drum on rear

35 The electrical brakes are commonly used on **[C]**

(A)Two wheelers (B)Trucks (C)Trains (D)Cars

36 In vacuum brakes these is vacuum on both sides of the piston during **[A]**
(A)Brake release (B)Brake application
(C)Part application of brakes (D)All of these

37 The maximum disc warnout allowed is **[B]**
(A)0.01 mm (B)0.1 mm (C)0.5 mm (D)1 mm

38 The operation used to remove trapped air from hydraulic brake system is known as
(A)Tapping (B)Trapping (C)Bleeding (D)Skidding **[C]**

39 If the brake wheels get locked before the vehicle stops, the vehicle is said to be **[B]**
(A)Slipping (B)Skidding (C)Sliding (D)Rolling

40 The brake lining is mounted on **[A]**
(A)Brake shoe (B)Brake drum (C)Wheel cylinder (D)Any of the above