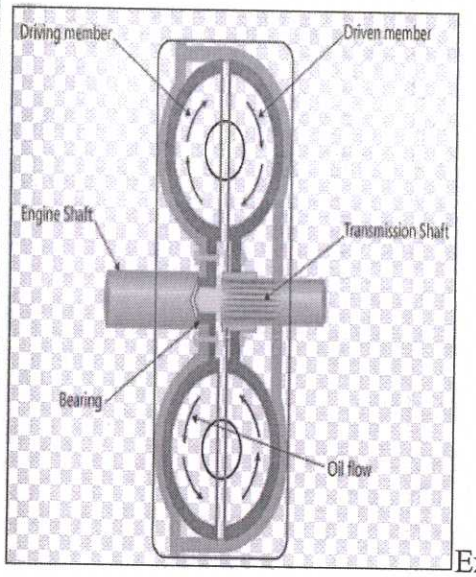
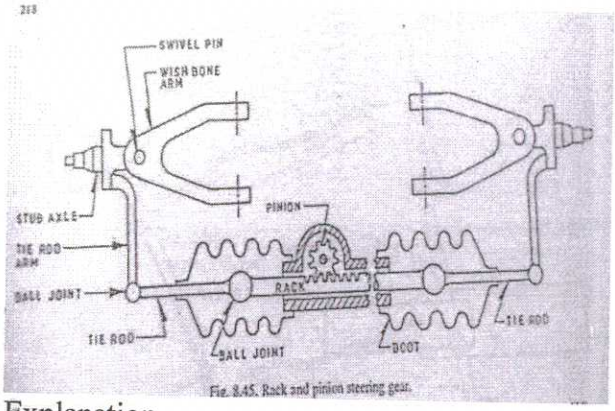
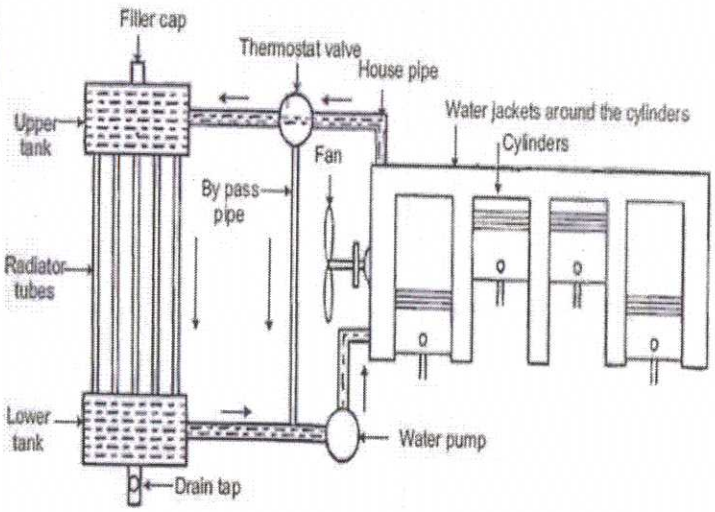
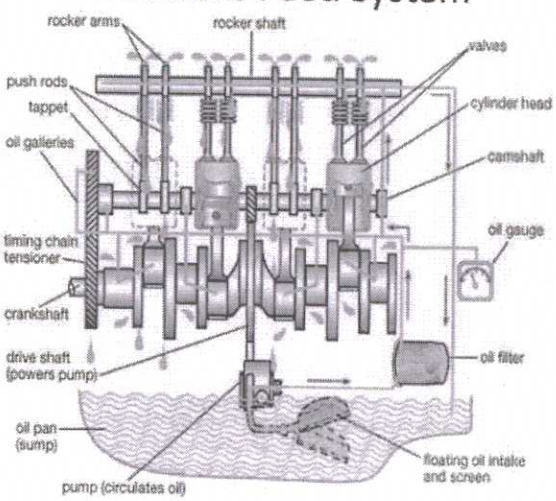
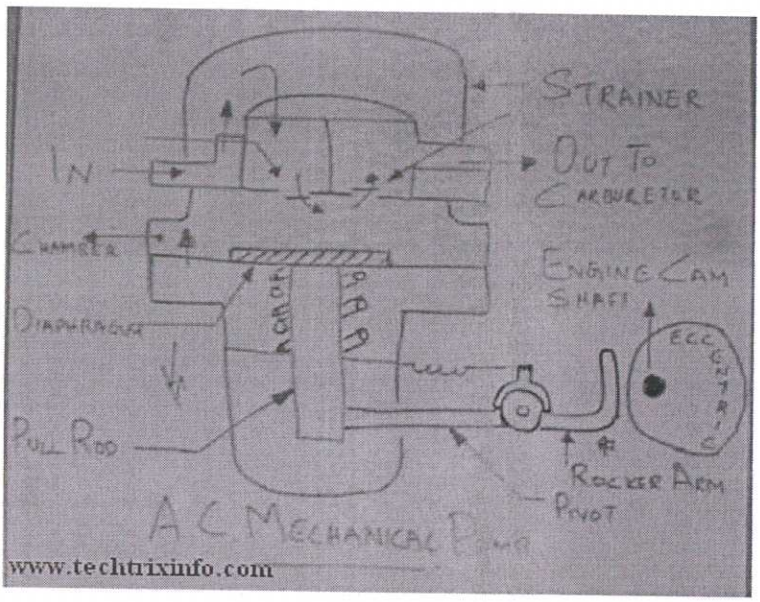
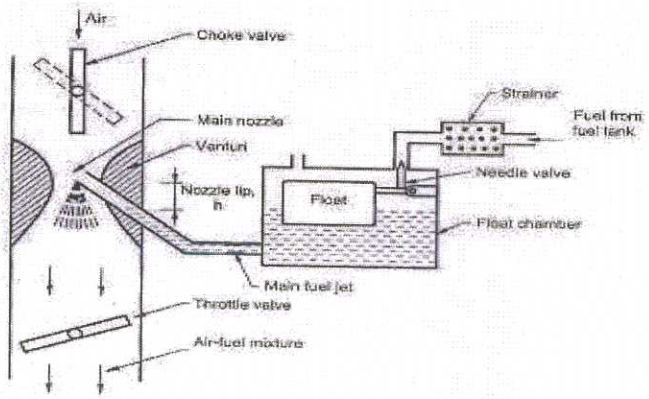
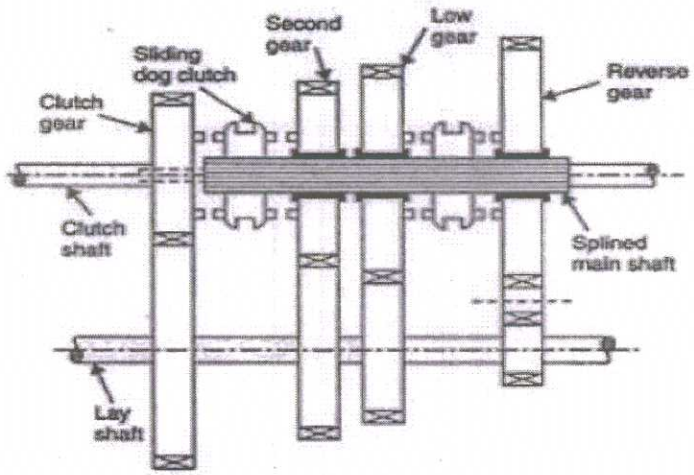
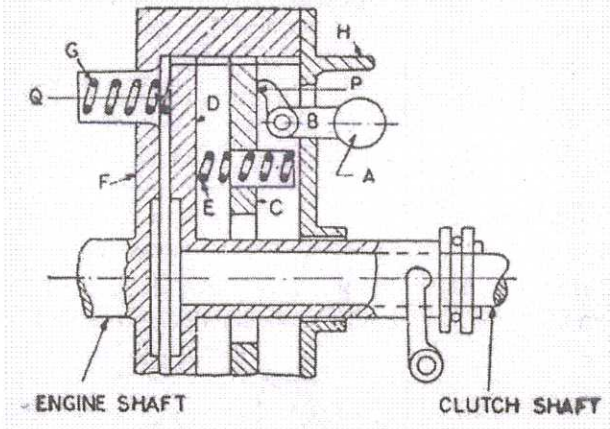
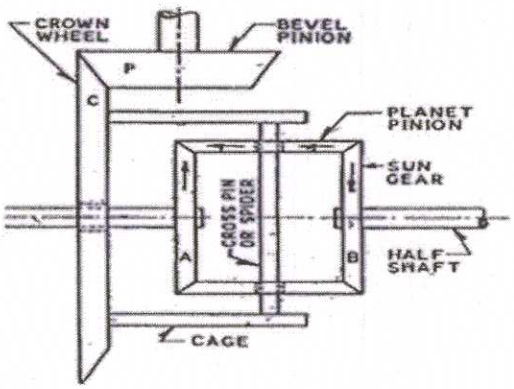
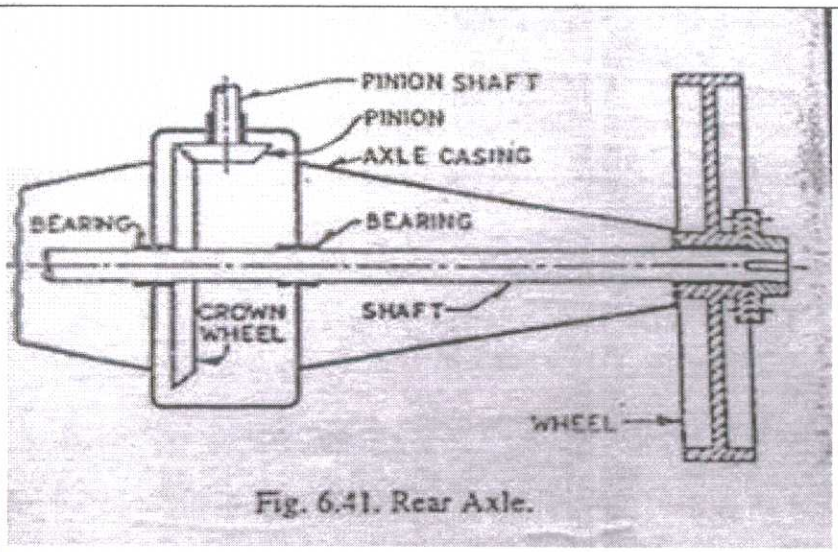
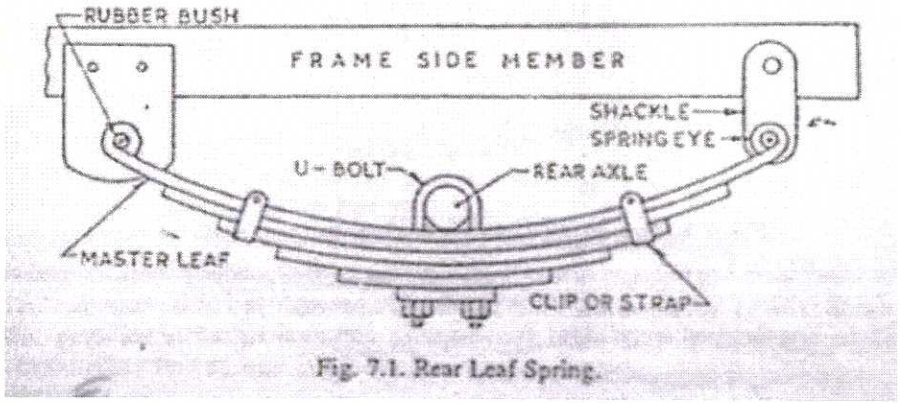
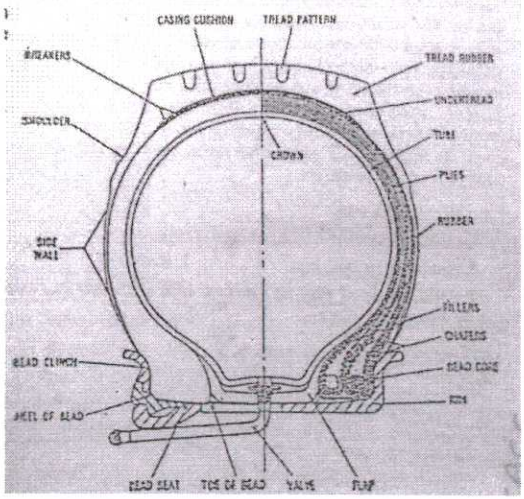
Qst. No.	Scoring Indicator	Split up score	Sub Total	Total
I				
1	Some times in the hydraulic brake system air enters through the joints. Since the air is compressible, High braking pressure is disturbed and pedaling action is not effective. So, any air trapped in the system must be removed the procedure adopted to remove the air out of the breaking system is called Bleeding.	2	2	
2	Air–fuel ratio (AFR) is the mass ratio of air to fuel present in a combustion process such as in an internal combustion engine or industrial furnace. If exactly enough air is provided to completely burn all of the fuel, the ratio is known as the stoichiometric mixture, often abbreviated to stoic. For precise AFR calculations, the oxygen content of combustion air should bespecified because of possible dilution by ambient water vapour, or enrichment by oxygen additions. The AFR is an important measure for anti-pollution and performance-tuning reasons.	2	2	10
3	. Toexchange the engine power for greater torque and provide mechanical advantage to drive the vehicle under differentoperating condition. To provide reverse motion.	2	2	
4	. Thermostat helps the engine to reach the operating temperature as soon as possible after starting as the engine s are design to operate most efficiently over a small temperature range of 80 to 100°c. In many engines the thermastat is in the coolant passage between the cylinder head and the radiators.	2	2	
5	Intercoolers are utilized to remove the waste heat from the first stage of two-stage air compressors. Two-stage air compressors are manufactured because of their inherent efficiency. The cooling action of the intercooler is principally responsible for this higher efficiency, which densifying the air charge. This, in turn, allows the second stage to produce more work from its fixed compression ratio	2	2	

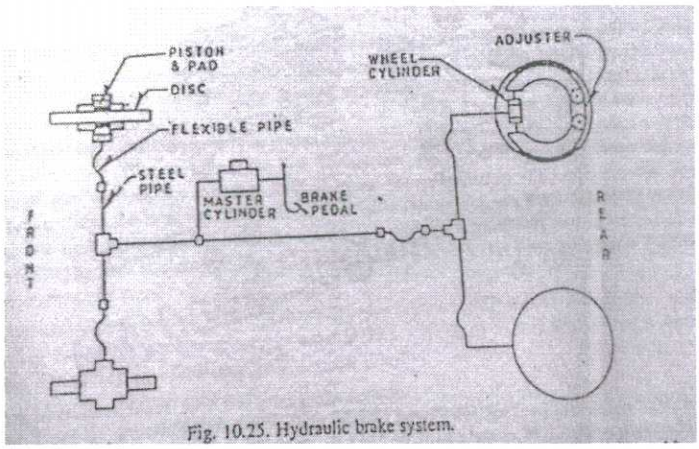
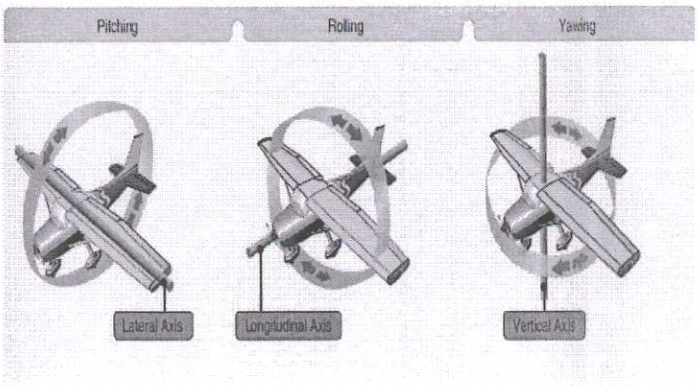
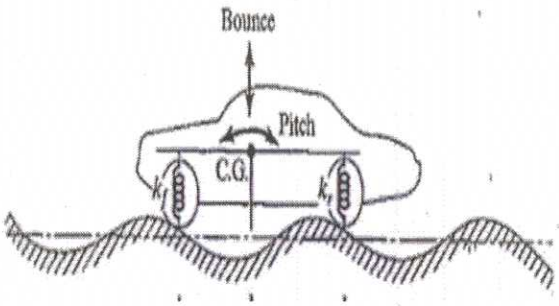
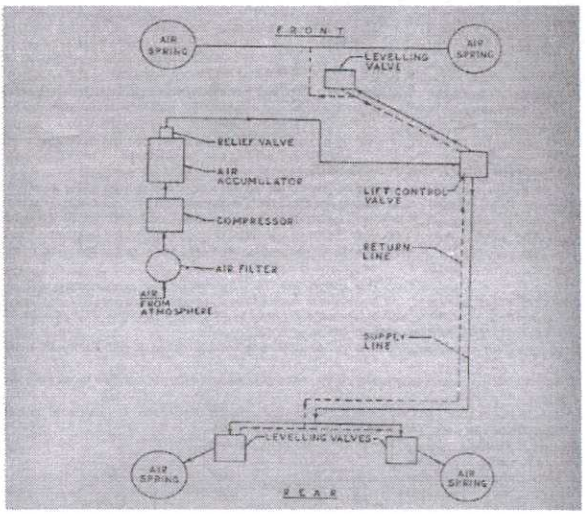
II 1	The process of providing any arrangement, which will keep the engine speed constant (according to the changing load conditions) is known as governing of I.C. engines. Though there are many methods for the governing of I.C. engines, yet the following are important : **Hit and Miss method of governing** **Quality governing:** **Quantity Governing:** **Combined method**	3 3	6	
2	<table><tr><th>Criterion</th><th>Battery ignition system</th><th>Magneto ignition system</th></tr><tr><td>Source of energy</td><td>Battery (6 to 12 v)</td><td>Magneto</td></tr><tr><td>Maintanance</td><td>Costly, due to discharge of battery.</td><td>Cheap, since there is no battery.</td></tr><tr><td>Quality of spark</td><td>Good, even at low speed</td><td>Poor at starting, due to low speed</td></tr><tr><td>Efficiency</td><td>Decreases as the speed increases</td><td>Increases as the speed increases.</td></tr><tr><td>Uses</td><td>Used in cars and light trucks</td><td>Used in high speed cars and two wheelers.</td></tr></table>	6	6	
3	Torque Transmission,Gradual Engagement,Heat Dissipation,Dynamic Balancing,Vibration Damping,Size (small),Inertia,Clutch free pedal play,Ease of Operation	6*1	6	
4 V	 Explanation	3	6	
5	Toe in is the amount by which the front wheels are closer at the front than the rear. Camber is the angle between the vertical line and the central line of the tyre when viewed from the front.	3 2	0	

6	Kingpin inclination is the angle between the king pin line and the vertical line when seen from front. It is also called steering axis inclination  Fig. 8.45. Rack and pinion steering gear. Explanation	2 2 3	6 6	30
7	The central locking system is controlled by an electric device called the central locking control unit that is basically a relay. There are normally 4 wires that go to each door. Two of the wires connect to the lock mechanism and tell the central locking control unit whether the doors are locked or not. The other two wires connect to the actuator which can either take the form of a motor or an electro magnet. The central locking control unit connects these wires in one direction to lock and the opposite direction to unlock the doors. Most modern cars also have a remote key fob. This send a radio or IR signal to a detector which then connects to the central locking control unit to tell the car to lock or unlock. This uses a coded signal that is unique to that particular key fob.	3 6	6	
III a	 Explanation	4 4	8	20

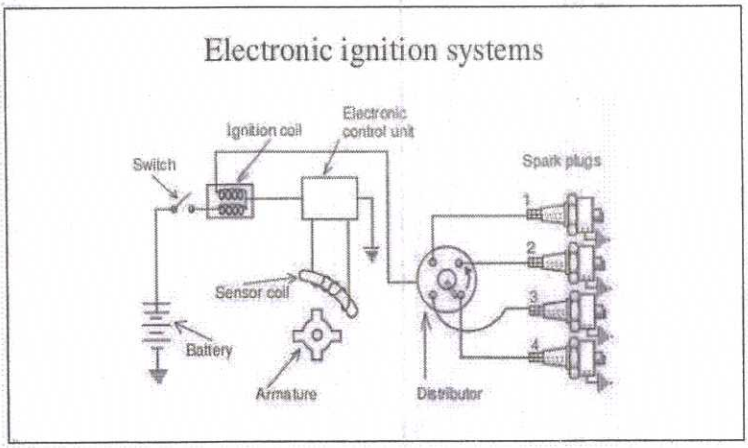
b	 Explanation	4 3	7	15
IV a	 Explanation	4 4	8	
b	 Explanation	4 3	7	15

V a	 Constant Mesh Gear Box	4	8	15
	Explanation	4		
b		4	7	
	Explanation	3		
VI a	 Open Differential	4	8	15
	Explanation	4		

B	 Fig. 6.41. Rear Axle.		4	7	
	Explanation		3		
VII a	 Fig. 7.1. Rear Leaf Spring.		4	8	
	Explanation		4		
b			4	7	15
	Explanation		3		

VIII				
a	 Fig. 10.25. Hydraulic brake system.	4		
	Explanation	4	8	
b		3		15
	 Explanation	1 3	7	
IX				
a		4	8	
	Explanation	3		

b



4

7

15

Explanation

3

X

A

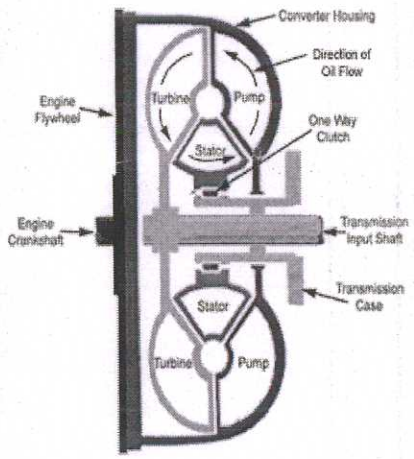
Emissions of many air pollutants have been shown to have variety of negative effects on public health and the natural environment. Emissions that are principal pollutants of concern include:

- **Hydrocarbons Carbon monoxide (CO).**
- **Nitrogen oxides (NOx)**
- **Particulate matter**
- **Sulphur oxide (SOx) –**
- **Volatile organic compounds (VOCs**

4*2

8

B



4

7

15

Explanation

3