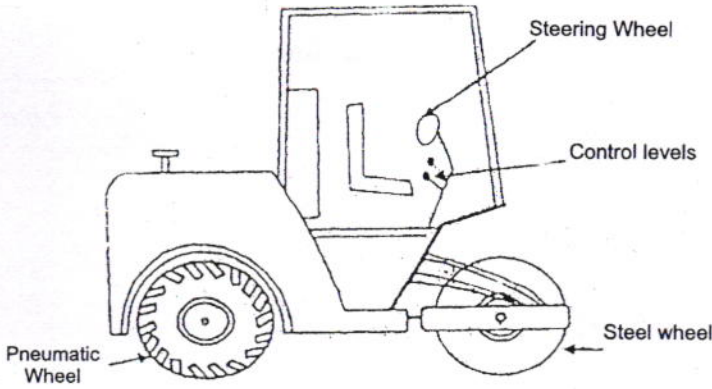

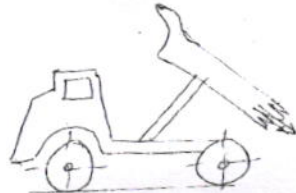
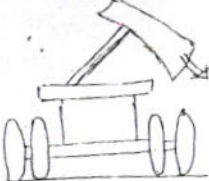
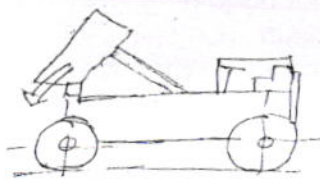


D 12

SCORING INDICATORS

Qn:No	Scoring Indicators	Split score	Total score
I PART A			
1.	<ul style="list-style-type: none"> * This type of tractors specially meant for orchard used only. * used for trimming of trees. * These are made very high in height so that fruits can easily plucked. 	2 1x1 =	2
2.	<ul style="list-style-type: none"> * To Drive water pumps. * To Drive thresher. * To Drive chaff cutter. * To Drive Dust sprayer 	2 1x1 =	2
3.	<p>Scrapers may be broadly classified into two</p> <ul style="list-style-type: none"> * Crawler tractor scraper. * Wheel tractor scraper. 	2 1x1 =	2
4	<ul style="list-style-type: none"> * No. of wheels - 2 in case of tandem Roller * width - width of rollers is more in tandem type * capacity - 6-8 Tonnes capacity. * size - Tandem type rollers are smaller compared to 3 wheeled rollers. 	2 1x1 =	2
5	<ul style="list-style-type: none"> * Van * Van - semitrailer * Cement tank truck * panel carriers 	2 1x1 =	2
II PART B			
1	<p>The main parts of the steering system of tractor</p> <ul style="list-style-type: none"> * Steering wheel * steering column. * steering shaft. * Steering Gear box * Drop arm * steering linkages. 	6 1x6 =	6

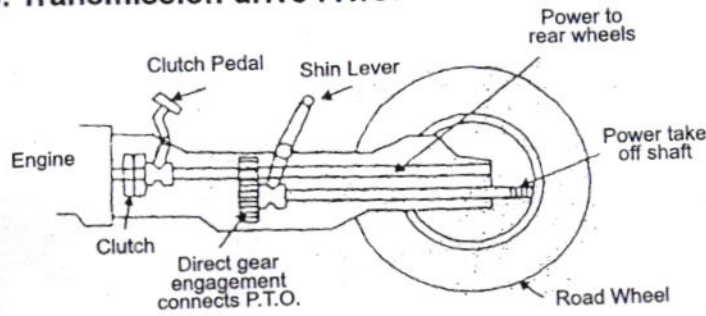
2	<p>Functions and work of a sprayer</p> <ol style="list-style-type: none"> 1. It should distribute the chemical uniformly on plant surface. 2. It should have provision to increase or decrease the quantity of insecticides application. 3. It should break the liquid into fine droplets. 4. It should have provision to control or regulate the size of droplets. 5. It should be simple in design. 6. If the droplets are very fine or small, these may be carried away with the wind and if they are too big, the spray may not cover the entire plant. 	1x6 = 6	
3	<p>Bottom Dump Truck</p> <p>The important features of these trucks are</p> <ol style="list-style-type: none"> 1. Front of the trucks is supported on the rear of the hauling tractor. 2. The rear rests on own wheels. 3. The bottom is fitted with two longitudinal gates made of, thick steel plate. These gates are reinforced with channel sections swinging on steel hinges. . 4. The gates, which are hinged to the side of the truck body, are actuated from driver's cabin by single control lever. 	1.5x4 = 6	
4	<p>vibrating steel drum roller.</p> 	<p>sketch - 4 part - 2 = 6</p>	6

5	<p>■. Sketch different methods of dumping arrangement?</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Bottom Dump</p> </div> <div style="text-align: center;">  <p>End Dump</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Side Dump</p> </div> <div style="text-align: center;">  <p>Front Dump</p> </div> </div>	$2 \times 3 = 6$	
6	<p>1) For heavy excavating works of course it is necessary to have more traction power. By having crawler the contact area bit ground and chain (Track) is more and hence these are having high tractive force.</p> <p>2) Cabin can be easily and conveniently by rotated around 360°, without affecting the track movement.</p> <p>3) Hydraulic assisted system which enables the work fast and convenient etc.</p>	$2 \times 3 = 6$ 1	
7	<p>■ List six special purpose automobile carrying equipment for definite operations?</p> <ul style="list-style-type: none"> i) Dump trucks ii) Loaders iii) Cranes and vehicles with special winches iv) Road rollers v) Tractors vi) Fire fighting vehicle with automatic pumps, mechanized ladders etc. 	$1 \times 6 = 6$	

PART C

III a

- (a) Transmission drive (b) Independent drive
- (c) Continuous running.
- (a). Transmission drive P.T.O.**

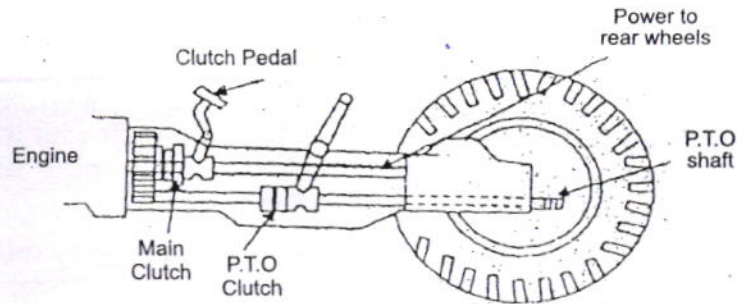


any $2 \times 4 = 8$

These types of transmissions were introduced right from the beginning i.e. in 1920 Drive to PTO is controlled by the main (Engine) Clutch that controls ground speed of tractor. With this arrangement P.T.O. shaft operates whenever clutch is engaged to start the tractor as shown in Fig.

In this arrangement there is a disadvantage that when the tractor stops or pressing the clutch, PTO shaft also stops working. For the machine to operate without tractor movement it is essential to the gear in neutral and again re-engage the clutch.

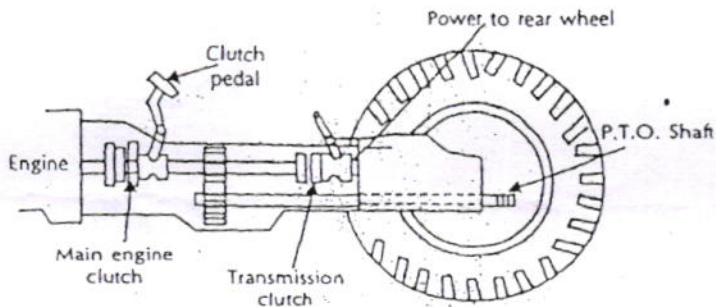
(b) Independent drive



Independent drives were introduced to overcome the difficulty experienced in transmission drive P.T.O. In this arrangement the P.T.O. shaft gets drive directly from engine and it is controlled by PTO clutch. Hence in this arrangement, it is possible to operate machines when the tractor is in motion or standing still.

It is independent of the main clutch, the P.T.O. can operate whether main clutch is engaged or disengaged. Power to P.T.O. can be engaged or disengaged through a lever by shifting the dog clutch.

(c) Continuous running drive



In this arrangement, P.T.O. shaft gets drive from main clutch. When tractor is in motion P.T.O. shaft also operates and for operating P.T.O. without tractor motion, the drive power to differential is disconnected by transmission clutch. It means operation of PTO shaft is continuous when tractor is in motion and can also made to continuous drive

III (b)

7

*** Define tractors.**

Tractors are defined as such a machine used to pull or push agricultural implements in the field. It is one of the basic machines used for accelerating agricultural production. Tractor word is derived from traction motor.

3 =

*** List applications of tractor?**

1. To perform agricultural work
2. Earth moving
3. Road making
4. Load carrying
5. Tractor machine is used to power stationary machine
6. Tractors are used for towing semi trailers, trailers and for carrying Special pendant mechanisms and implements.

any-4

1 x 4 = 4

4 + 3 = 7