

PARUL UNIVERSITY
COLLEGE OF AGRICULTURE

B.Sc.(Hons.)Agriculture Winter Examination-2023 - 24

Semester: 3rd

Subject Code:20106202

Subject Name: Farm machinery and power

Dates: 7.12.2023

Times:10:30 am to 1:00 pm

Total Marks: 50

Instructions

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1	Do as Directed.		CO	PO	Bloom's Taxonomy
A.	Fill in the blanks. (Each of 0.5 mark)	(05)			
	1. A pair of bullock develops power equivalent to: _____ HP		1	1	Remember
	2. The process of removal of burnt or exhaust gases from the engine cylinder is known as _____.		2	1	Remember
	3. In India about _____ % farm holding belong to small and marginal farmers and about _____ % belong to semi, medium and large farm holders.		1	1	Remember
	4. In tractor three point hitch is operated by _____ system.		5	1	Remember
	5. Hydraulic pump develops a pressure about _____.		4	1	Remember
	6. Harrowing is the _____ tillage operation.		5	1	Remember
	7. The liner distance travelled by the piston from Top Dead Centre to Bottom Dead centre is known as _____.		2	1	Remember
	8. The disc angle of good plough varies between _____.		5	3	Remember
	9. The tilth angle varies from _____ for a good plough.		5	3	Remember
	10. The diameter of seed tube for different seeds should be: _____ mm.		5	1	Remember
B.	Multiple choice type questions. (Each of 0.5 mark)	(10)			
	1. A man can develop: _____.		1	1	Remember
	a) 0.1 hp				
	c) 0.75 hp				
	b) 0.5 hp				
	d) 1.0 hp				
	2. In tractor three point hitch is operated by _____.		4	1	Remember
	(a) Clutch system				
	(c) Gear system				
	(b) Hydraulic system				
	(d) All are correct				
	3. Animal fat lubricants are _____.		4	1	Remember
	(a) Suitable for machine				
	(c) less viscous				
	(b) It is gummy and waxy type				
	(d) All are correct				
	4. Crown wheel is a part of: _____.		2	1	Remember
	a) Clutch system				
	c) Steering system				
	b) Differential system				
	d) Cooling system				
	5. Fluctuation of engine speed during a cycle depends upon: _____.		2	1	Remember
	a) Crankshaft				
	c) Governor				
	b) Mass of flywheel				
	d) All are correct				
	6. Lubricants are obtained from vegetables is suitable for _____.		4	1	Remember
	(a) Small and simple implement				
	(c) Tractor and Stationary engine				

	(b) All heavy implement	(d) None of these			
7	The compression ratio of disel engine is:_____.		5	1	Remember
	a)14 to 22:1	c)8 to 12:1			
	b)8 to 15:1	d)12to 15:1			
8	The compression ratio of petrol engine is:_____.		2	3	Remember
	a)4 to 8:1	c)8 to 12:1			
	b)8 to 15:1	d)12to 15:1			
9	The function of seed drill is:_____.		5	1	Remember
	a) To carry seeds	c) To deposit seeds in furrow			
	b) To meter seeds	d) All are correct			
10	The thermal efficiency of petrol engine varies between:		2	1	Remember
	a) 25 to 32 percent	c) 38 to 42 per			
	b) 32 to 38 per cent	d) All are correct			
11	The thermal efficiency of diesel engine varies between:_____.		2	1	Remember
	a) 25 to 32 percent	c) 38 to 42 per			
	b) 32 to 38 per cent	d) All are correct			
12	The equipment used for dropping seeds in a continuous stream and the spacing between plant to plant in a row is not constant is:_____.		5	1	Remember
	(a)Seed drill	(b)Planter			
	(c)Transplanter	(d)All are correct			
13	The IHP of engine indicates		2	1	Remember
	(a) Power on Piston	(c) Power on flywheel			
	(b) Power on drawbar	(d) loss of power			
14	The random scattering of seed on the surface of seedbed is:		5	1	Remember
	(a) Dibbling	(c) Hill dropping			
	(b)Broadcasting	(d) Check row planting			
15	Penteration of disc plough can be improved by_____.		5	1	Remember
	a) Increasing disc angle	c) Decreasing tilt angle			
	b) Both (a) and (c)	d) None of the above			
16	Width of cut of disc plough is increased by _____.		5	1	Remember
	a) Increasing disc angle	c) Increasing tilt angle			
	b) Addition of more weight	d) Decreasing disc angle			
17	The average force that a bullock can exert:_____.		1	1	Remember
	a) 1/5th of their body weight	c) 1/10th of their body weight			
	b) 1/20th of their body weight	d) 1/25th of their body weight			
18	What is the correct sequence of strokes in four stroke cycle engines?		2	1	Remember
	a) Compression, Suction, Exhaust, Power	c) Power, Suction, Exhaust, Compression			
	b) Suction, Compression, Power, Exhaust	d) Suction, Power, Compression, Exhaust			
19	Mineral lubricants are obtained from:_____.		4	1	Remember
	a) Castor and cotton seed oil	c) Crude petroleum			
	b) Both (a) & (c)	d) None of these			
20	The size of mould board plough is expressed by:_____.		5	1	Understand

	a) width of cut	c) depth of cut			
	b) A and C	d) None of these			
Q.2	Do as Directed.				
A.	Define the following. (Any five out of seven)		(05)		
	1.Compression ratio		2	3	Remember
	2.Differential lock		3	3	Understand
	3.Differential		3	3	Understand
	4.Bore and strok		3	1	Understand
	5.Tillage		5	1	Understand
	6.Threshing		5	1	Remember
	7.Harvesting		5	1	Remember
B.	Answer the following. (Any five out of seven)		(05)		
	1.What is the function of I.C. engine?		3	1	Understand
	2.What is the function of thermostat valve in cooling system?		4	3	Understand
	3.What is the function of gear? Enlist the different types of gear used in tractor.		3	3	Remember
	4. Enlist the different implements and tool used for interculture operation.		5	1	Remember
	5.Enlist the different types of threshing cylinders commonly used in thresher.		5	3	Remember
	6.Enlist the primary and secondary tillage implements.		5	3	Remember
	7. Write the function of crankshaft in I.C. engine.		3	1	Remember
Q.3	Write short notes. (Any five out of six)		(10)		
	1.Write the function of combine harvester.		5	3	Understand
	2.Write the objective of tillage.		5	3	Understand
	3. What is the purpose of lubrication system? Why are need lubrication of I.C. engine?		4	1	Understand
	4. Write the advantage and disadvantage of cooling system.		4	1	Remember
	5.Write the short notes on Human power.		1	1	Remember
	6. Explain the broadcasting and dibbling methods of sowing.		5	1	Remember
Q.4	Long Questions/Example (Attempt any three out of four)		(15)		
	1.Explain the M.B. plough with neat sketch.		5	3	Remember
	2.Explain the sprayer with components.		5	3	Remember
	3. Explain the working of four stroke cycle I.C. Engine.		2	3	Understand
	4.Explain the working of hydraulic control system with the help of neat sketch. What are the main components of the system?		3	1	Understand