Seat No:_____ Enrollment No:_____

PARUL UNIVERSITY

COLLEGE OF AGRICULTURE

B.Sc. (Hons.) Agriculture Summer 2021 - 22 Examination

Semester: 3 **Date: 24-03-2022**
Subject Code: 20106202 **Time: 2:00pm to 4:30pm**
Subject Name: Farm machinery and Power **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.

A. Fill in the blanks. (Each of 0.50 marks) **(05)**

1. The cheapest source of energy is _____.
2. Power available from a farm labour is _____ hp
3. The power of a tractor is expressed usually in terms of _____.
4. External combustion engine utilizes the heat in the form of _____.
5. Engine, in which one cycle is completed, in one revolutions of crank shaft, is called _____.
6. S.I. Stand for _____.
7. It processes of removal of burnt or exhaust gases from the engine cylinder is known as _____.
8. The thermal efficiency of petrol engine is _____ than that of diesel engine.
9. The carburetor is main part of _____ (Petrol or diesel engine).
10. One HP is equivalent to _____ kg-m /sec.

B. Multiple choice type questions. (Each of 0.50 mark) **(10)**

1. Preparation of soil in such a way that crop residues and other mulching materials are left on the surface is called _____.
   a) Mulch tillage b) strip tillage
   c) rotary tillage d) Minimum tillage

2. The open trench left in between two adjacent strips of land after finishing the ploughing is called _____.
   a) dead furrow b) back furrow
   c) head land d) crown

3. Theoretical field capacity of a double action disc harrow is 1.0 ha/h. Field efficiency is 80 %. What is the actual field capacity?
   a) 0.8 ha/h b) 1.5 ha/h
   c) 0.5 ha/h d) 1.8 ha/h

4. The machine which cuts the crops and ties them into a neat and uniform sheave is known as _____.
   a) Mower b) reaper binder
   c) harvester d) none

5. The machine used to cut herbage crops is called _____.
   a) mower b) windrower
   c) Reaper d) harvester

6. Swinging knives are used in _____.
   a) flail mower b) horizontal rotary mower
   c) cylindrical mower d) reciprocating mower

7. I.H.P. stand for
   a) Indicated Horse Power b) Integrated Horse Power
   c) Integrated House Power d) Indicated Hours Power

8. B.D.C stand for
   a) Bottom dead centre b) Bottom demo centre
   c) Bottom diameter centre d) Bottom deal centre

9. B.H.P. stand for
   a) Break Horse Power b) Break House Power
   c) Bottom Horse Power d) Bottom Hours Power

10. Which of the following components of a sprayer is very important?
a) Nozzle b) Spray gun
c) Cut-off lever d) Strainer

11. Sprayers can be used to apply _____.
a) herbicide b) insecticide
c) fungicide d) all the three chemicals

12. The chemical solution requirement of a sprayer is 80 lit/ha. The sprayer can be classified under _____.
a) low volume sprayer b) ultra-low volume sprayer
c) high volume sprayer d) none

13. In battery operated sprayers the component which breaks the chemical Solution in to fine particles is called _____.
a) nozzle b) spinning disc
c) spray gun d) none

14. The main advantage of using long handle weeders is _____.
a) Cheaper cost of weeder b) Less drudgery to operator
c) Less area of coverage d) Traditional tool

15. Junior hoe is primarily used for
a) breaking clods b) weeding
c) seed bed preparation d) none

16. In seed metering mechanisms used in planters the device which knocks out the seeds from the cells is called _____.
a) Fluted rollers b) Knock-out mechanism
c) Cut-off mechanism d) Drive wheel

17. The mechanism used to meter fertilizer in seed cum fertilizer drill is _____.
a) edge drop rotor b) Ruger feed mechanism
c) Cup feed mechanism d) Fluted rollers

18. Dropping of seeds in furrow lines in a continuous flow and covering them with soil is called as _____.
a) Hill dropping b) drilling
c) check row planting d) Broadcasting

19. In most of the seed drills drive for seed metering mechanism is taken from _____.
a) Ground wheel b) PTO shaft
c) Hydraulic system d) Engine

20. Seed metering mechanism used in cultivator seed drill is
a) Cup feed mechanism b) Fluted rollers
d) Auger feed mechanism
c) Brush feed mechanism

Q.2 Do as Directed.

A. Define the following. (Any five) **(05)**

1. Brake
2. Mould board
3. Vertical suction
4. Dibbling
5. No till
6. Effective Field capacity
7. Conservation tillage

B. Answer the following. (Any Five) **(05)**

1. Mention the basic components of diesel Engine.
2. State the advantages of using seed drills
3. Name two implements used for conserving soil moisture in dry lands.
4. State the functions of sprayer.
5. Enlist functions of carburettor.
6. What is minimum tillage?
7. Whenever a plough works round a strip of un ploughed land it is called casting. True / False

Q.3 Write short notes. (Any five) **(10)**

1. List the advantages of diesel engine.
2. Differentiate petrol and diesel engine
3. Compare broadcasting with drill sowing
4. Explain about different types of nozzles.
5. Enlist benefits of farm mechanization.
6. Differentiate: Two stock and Four stock engine.
7. List the advantages of harvesters.

Q.4 Attempt any Three/Long Questions/Example **(15)**

1. State the merits and demerits of different sources of energy used in farm.
2. Write about the working of four stroke cycle engine.
3. Define inter cultivation in agriculture. Mention some tools and implement used in inter cultivation.
4. Explain air cooled system.

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