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**3<sup>rd</sup> SEMESTER REGULAR EXAMINATIONS, SEPT/OCT 2019-20**  
**AT-232**

**FARM MACHINERY & POWER**

Time : 2 Hours

Maximum : 50 Marks

(Answer **all** questions of Section – A)

**SECTION – A**

**[10×0.5 = 5]**

Q.1 Fill up the Blanks with suitable and meaningful word(s):

- a. The petrol Engines have compression ratios ranging from -----to-----
- b. The piston pin connects between ----- and -----
- c. During Suction stroke-----and ----- admitted into the cylinders in petrol and diesel engine respectively.
- d. When piston is at TDC the volume of cylinder is known as-----
- e. The ratio of break power to indicated power of an I.C engine is called-----
- f. The thermal efficiency of diesel engine varies from -----to----- per cent
- g. An average pair of bullock can develop maximum power of about ----- watt for doing farm work.
- h. ----- receive the fuel from fuel pump and spray the fuel in to combustion chamber in diesel engine.
- i. The firing order of 4-cylinder engine is -----.
- j. The main difference between a planter & seed drill is ----- mechanism.

Q.2. Define or Explain the following in one or two sentences

**[ 5 × 1 = 5]**

- a) compression ratio
- b) firing order of 4cylinder engine
- c) connecting rod
- d) Tillage
- e) combine harvester

Q.3. Match the following

**[10 × 0.5 = 5]**

- |                            |                           |
|----------------------------|---------------------------|
| a. Disk plough             | 1.Attachment of MB        |
| b. PTO                     | 2.Primary tillage         |
| c. Disk harrow             | 3.Power outlet of tractor |
| d. BDC                     | 4.Secondary tillage       |
| e. Carburetor              | 5. Piston                 |
| f. High pressure fuel pump | 6.wheel hoe               |
| g. Weeding                 | 7.Diesel engine           |
| h. Fluted roller           | 8. Furrow opener          |
| i. Shovel type             | 9. Metering               |
| j. Colter                  | 10 Petrol engine          |



- Q.4. Write **TRUE** or **FALSE** against the following statements [ 10 × 0.5 = 5]
- a) The thermal efficiency of petrol engine is less than diesel engine for same power
  - b) Crank shaft rotates at half the speed of Cam shaft
  - c) The lowest temperature at which the fuel burn is known as flash point.
  - d) The radiator is absent in air cooling system.
  - e) Compression ratio of petrol engine is higher than diesel engine.
  - f) The Puddling is done to reduce the percolation loss.
  - g) Self-propelled trans planer is operated by bullock.
  - h) The planters are used for precision planting of small seeds.
  - i) MB plough is use as a multipurpose tool.
  - j) Flat fan nozzles are used for herbicide application.

**SECTION – B**

(Attempt any **five** questions. Each question carries equal marks) 5x6=30

- Q.5 Write the different parts of a seed drill and how to calibrate a seed drill?
- Q.6 Difference between two stroke and four stroke engines with diagram
- Q.7 A four stoke has mean effective pressure of 686kPa.area of piston is  $730\text{cm}^2$ , stroke length 45cm, torque due to break load 1078Nm. Fuel Consumption per hour is 4.5kg and working speed 120 rpm. Calculate the a) indicated power b) brake power c) mechanical efficiency d)specific fuel consumption
- Q.8 Describe the forced circulation water cooling systems of a tractor system.
- Q.9 What are the main objectives of tillage? What is a primary tillage? Name the different primary tillage equipment.
- Q.10 Find the cost of operation of per hour of a 18hp tractor costing rs.3,00,000. Life of the tractor is 10 years rate of interest is 10% and working hours per year is 1000hours.The tractor consume 3lts diesel per hour Assume other data if necessary.

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