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**GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)**

**B. Sc. (Ag.)(Third Semester) Examinations, January – 2024
FMP(Ag.)-211- Farm Machinery & Power**

Time: 2 hrs

Maximum : 50 Marks

The figures in the right and margin indicate marks.

PART – A

Q.1. Fill in the blanks with suitable word / figure.

(0.5 x 10 = 5 Marks)

- For every two revolutions of the crankshaft produce revolution of the camshaft and one opening and closing of each valve.
- Thermal efficiency of Diesel Engine varies from to%.
- The top of the piston is called the.....
- is a device, which cleans and filters the air before entering the combustion chamber of an engine.
- The cooling system of IC engine should maintain the engine temperature at..... to °C for Diesel engine.
- The of the engine drives the lubricating oil pump.
- type mould board is used in tough soils of grasses.
- The tilt angle of good plough varies between and.....
- type of disc harrow is very useful for orchards and gardens.
- is a machine to apply chemical in dust form.

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

(1 x 5 = 5 Marks)

- Stroke
- Brake horse power
- Draft
- Gang angle
- Tillage

Q3. Match the following

(0.5 x 10 = 5 Marks)

Column – A

Column – B

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| (a) Stroke Bore ratio of tractor Engine | (i) Camshaft of the engine |
| (b) Power developed by an average pair of bullocks | (ii) Reaper |
| (c) Electrical power | (iii) Used for metering bold and small seeds |
| (d) Compression ring | (iv) Wet land Weeder |
| (e) Atmospheric pressure | (v) 1.25 |
| (f) Forced Circulation Water Cooling System | (vi) 1 hp |
| (g) The lubricating pump is driven by | (vii) Very cheap form of power |

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| (h) Registration | (viii) Usually plain, single piece and are always placed in the grooves, nearest to the piston head. |
| (i) Internal double run type seed metering mechanism | (ix) Pin hole on the cap |
| (j) Cono Weeder | (x) Centrifugal pump |

Q4. Write True or False against each statement

(0.5 x 10 = 5 Marks)

- For a two-stroke engine, a firing interval of 360° divided by the number of cylinders.
- Water cooling system is used for bigger engine.
- Final drive is a gear reduction unit in the power trains between differentials and drive wheels.
- Hydraulic System is also used for tilting hydraulic trailer.
- In Draft control, the implement is set for particular draft (drawbar pull) rather than depth.
- The front edge of the share which makes horizontal cut in the soil is called cutting edge of the share.
- Comparatively, the disc plough leaves the soil in rough and cloddy condition than that of mould board plough.
- Off-set disc harrow is very useful for orchards and gardens.
- The float of Cono weeder prevents the unit from sinking into the soil.
- Rasp bar type threshing cylinder can be used for a wide variety of crops viz.-wheat, paddy, maize, soybean etc.

PART – B

Attempt ANY FIVE questions. All question carries equal marks (6 x 5 = 30 Marks)

- Explain Valve Timing Diagram with help of neat sketch.
- Explain Forced Feed Lubrication System with help of neat sketch.
- Explain Air cooling system with help of neat sketch.
- Explain Single action disc harrow with help of neat sketch.
- Explain different components of Rotavator with help of neat sketch.
- Explain Calibration procedure of seed drill.

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