

B.Sc. (Ag.) Honours Semester-IV Examination, 2017
Course No.: AEG-221
(Farm Power and Machinery)

Signature of Centre Superintendent

Roll No.: (in figure) _____ (in words) _____

Student Index No. _____ Regn. No. _____ of _____

Time: Two Hours

Full Marks: 40

Questions are of value as indicated in the margin

Part-I
(Objective and Short Answer Type)
(Use only ball point pen)

Time: 20 minutes

Full Marks: 10

Note: 1. Answer in question paper itself.

2. Striking, rewriting or overwriting are not allowed in the objective type questions.

1. Write down the functions of the following machine parts/engine components

1.5×5=7.5

- a) Ground wheel in a seed drill :
- b) Radiator in a tractor :
- c) Mould board of a m.b. plough :
- d) Fly wheel of an engine :
- e) De compression lever in an I C engine :

2. Fill up the blanks

0.5×5=2.5

- a) Thermal Efficiency of diesel engine is approx. _____ %.
- b) Compression ratio of petrol engine is _____ than that of diesel engine.
- c) Junk value of agricultural machines is approximately _____ % of initial purchase price.
- d) Unit draft is defined as _____ per unit _____.
- e) Inclined plate metering device is used in _____.

B.Sc. (Ag.) Honours Examination, 2017

Semester-IV

Course No.: AEG-221

(Farm Power and Machinery)

Part - II

(Descriptive Type)

Time: 100 Minutes

Full Marks: 30

Questions are of value as indicated in the margin.

Answer *any six* questions of which question no.3 is compulsory.

3. Differentiate between (*any five*) 2×5=10
- (a) Seed drill and Planter
 - (b) Cetane number and Octane number
 - (c) Specific Gravity and API degree of I C engine fuel
 - (d) Firing order and firing interval
 - (e) Disc angle and tilt angle of a disc plough
 - (f) BHP and IHP of an I C engine
4. The size of a bullock drawn m.b plough is 12 cm. 90% of the width is actually used. Ploughing is done at a speed of 2km/h. Find the theoretical field capacity and effective field capacity of the plough and calculate the time required to plough 10 acres of land thrice. 4
5. Describe the fuel supply system of a 4-stroke cycle S.I. engine with the help of a neat diagram describing the function of each component. 4
6. The line of pull of a bullock drawn plough makes 40° with the horizontal. The dynamometer reading of the pull is found as 65 kgf. Find the draft requirement of the plough. If the cross sectional area of the plough is 50 cm^2 . Also find the unit draft. 4
7. List the differences between C.I and S.I engine. Describe the working of a 2-stroke cycle SI engine with the help of a neat diagram. 4
8. Describe different types of energy used in agricultural farms with their merits and demerits. 4
9. Briefly describe the prospects and scope of farm machinery and power in Indian agriculture with special reference to West Bengal. 4
10. Briefly explain different seed metering mechanism with necessary diagrams. 4
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