Seed Drill Practice Questions

Q1. The maize planter drops seeds at 0.20m interval. The seed weight is 200 per 1000 revolution seeds. If the row to row spacing is 0.2m , the seed rate in Kg/ ha will be

(a) 5   (b) 10   (c) 20   (d) 40   [GATE 2011]

Q2. An 8 row automatic transplanted operates at a forward speed of 0.25m /sec . If the seeding spacing along the row is 0.75m. The required feed rate of seedling into the transplanting is

(a) 100 seedlings per minute   (b) 430 seedlings per minute   (c) 210 seedlings per minute   (d) 480 seedlings per minute   [GATE 2003]

Q3. A tractor drawn rotor planter is operated in the field at a forward speed of 5 km/ hr . The effective diameter of the ground wheel of the planter is 0.5m and the transmission ratio between the ground heel and rotor shaft is 1:1.

(A) If the skid is 10 percent, then the speed of the rotor in rpm will be

(a) 26   (b)   39 (c)   48   (d)   58   [GATE 2009]

Q4. A tractor drawn rotor planter is operated in the field at a forward speed of 5 km/ hr . The effective diameter of the ground wheel of the planter is 0.5m and the transmission ratio between the ground heel and rotor shaft is 1:1.

(A) If the skid is 10 percent, then the speed of the rotor in rpm will be

(a) 26   (b)   39 (c)   48   (d)   58   [GATE 2009]

Q5. Soybean is to be planted with a precision planter that meters 54 seeds per revolution of the metering disc powered from a ground wheel of diameter 490 mm. The desired plant population is 44800 per ha with a row to row spacing of 0.75 m. The germination percentage is 84. The planter is to be operated at 2.5 km h^{-1} with a 10% skid of ground wheel.   [GATE 2013]

The angular speed of ground wheel in rpm is

(A) 20.3 (B) 24.6 (C) 28.3 (D) 32.6

The angular speed ratio of metering disc to ground wheel for obtaining the desired plant population is

(A) 0.125:1 (B) 0.150:1 (C) 0.225:1 (D) 0.250:1

Q6. A tractor drawn seed broadcaster is operated at 10.8 km III. The broadcaster has a horizontal seed plate located inside the hopper above the ground level. The diameter of the plate is 300 mm and its angular velocity is 80 rad s-1. If the air resistance is neglected, the resultant velocity with which the seed mass is approaching the furrow 3 seconds after its release from the hopper is

(A) 29.40 ms-'   (B) 30.52 ms-'   (C) 31.75 ms-'   (D) 41.40 m s-1   [GATE 2008]

Q7.

A 9-row fluted roller type seed drill with 400 mm ground wheel diameter is used for sowing wheat at 200 mm row spacing. Each fluted roller discharges 6500 mm³ volume of seeds per revolution. The ratio of ground wheel rpm to fluted roller shaft rpm is 2:1. If the bulk density of wheat is 850 kg m⁻³, the seed rate in kg ha⁻¹ will be _____.

Q8. A two-row horizontal plate potato planter with 0.6 m ridge spacing has 9 cups on each seed plate of 0.4 m diameter. For each revolution of the ground wheel, the seed plate makes half a revolution. The diameter of the ground wheel is 0.5 m. If the planter uses cut tubers each of 25 g mass, the seed rate in kg ha-1 is _____.   [GATE 2014]

Q9. A vertical rotor planter has 8 cells on each rotor. The rolling radius of the ground wheel is 200 mm. The ratio of rpm of the ground wheel to that of the rotor shaft is 2:3. If the planting is done at a forward speed of 3.5 km h-1, the plant spacing in the rows in mm will be _____
          [GATE 2013]

Q10. A 9 × 20 cm fluted roller type seed drill is operated at a forward speed of 3 km /hr in a field of size of 120 m × 90 m. The effective ground wheel diameter of the seed drill is 0.5 m and the ratio of ground wheel rpm to the fluted roller rpm is 2. For one complete rotation of each fluted roller, 6.8 g seed is transferred from the seed box to the seed tube. The average time taken for each turn while operating length-wise is 50 s and the total time wasted in refilling the seed box for sowing the entire field is 40 min. The seed rate in kg ha-1 will be

 (A) 108.32 (B) 122.55 (C) 136.99 (D) 240.71   [GATE 2013]