8. Briefly describe about different sources of plant nutrients and justify how to maintain soil fertility in a long term manner.

9. Briefly describe about irrigation water quality and it" management.

10. Write short notes on the followings (any *three*) :

(*i*) Zero tillage

(*ii*) Criteria of essentiality

(*iii*) Allelopathy

(*iv*) Vermicompost.

B.SC.(Ag)—IS(AG-111)

2018

Time : 2 hours

Full Marks : 50

Answer **all** questions in Section - A and any **five** questions from Section - B

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

(FUNDAMENTALS OF AGRONOMY)

SECTION – A

1. Fill in the blanks with suitable words/figures. $\frac{1}{2} \times 10$

(*i*) *Sesbania aculeata* is grown to reclaim _____ soil.

(*ii*) The intensity of light at which the rate of photosynthesis is just sufficient

to meet the respiration of a plant is termed _____

(*iii*) Dhanicha adds _____ KgN/ha to soil through green manuring.

(*iv*) NH_4NO_3 contains _____ %nitrogen.

(*v*) Check basin method of irrigation is suitable for _____ crop.

(*vi*) Wooden plough generally cuts _____ shaped furrows.

(*vii*) The optimum depth of sowing for most of the field crops ranges between _____ cm.

(*viii*) The property of attraction of unlike molecules with each other is termed as _____

(*ix*) Paddy generally harvested _____ days after flowerings.

(*x*) _____ is a nitrification inhibitor.

2. Match the followings : $\frac{1}{2}\times 10$

Column "A"	Column "B"
(*i*) Slow release nitrogenous fertilizer	(*a*) Dibbler
(*ii*) Maconutrient	(*b*) Gypsum
(*iii*) Diffusion	(*c*) Emitters
(*iv*) Systemic herbicide	(*d*) IBDU
(*v*) Alkaline soil	(*e*) Simazine
(*vi*) Haemoglobin	(*f*) Compost
(*vii*) Trickle irrigation	(*g*) KNO_3
(*viii*) Zero tillage	(*h*) Fe
(*ix*) Salt petre	(*i*) Ca
(*x*) Bulky organic Manure	(*j*) K

3. Write True (T) or False (F) for the following statements : $\frac{1}{2}\times 10$

(*i*) Drip irrigation system has greatest potential where soils are rocky.

(*ii*) Fe deficient plants show chlorosis first in younger leaves.

(*iii*) 25-30 cm depth tillage is necessary for deep rooted crops.

(*iv*) Urea is a complex fertilizer.

(*v*) Unsaturated water flow starts in soil when the macropores are emptied.

(*vi*) Fluchloralin is an inorganic herbicide.

(*vii*) Square arrangement of plants is less efficient in the utilization of light, water, and nutrients than rectangular arrangement of plants.

(*viii*) Soil permeability increases by tillage operation through breaking the compact layers.

(*ix*) Lime is a good amendment for acid soil.

(*x*) Sulphur is a constituent part of the enzyme nitrate reductase.

4. Choose most appropriate answer from the following : $\frac{1}{2}\times 10$

(*i*) Permanent wilting point reaches at :

(*a*) 5 bar
(*b*) 10 bar
(*c*) 15 bar
(*d*) 20 bar

(*ii*) Percentage of oxygen in soil air :

(*a*) 10%
(*b*) 20%
(*c*) 30%
(*d*) 40%

(*iii*) In Zero tillage the herbicide used is :

(*a*) Fluchloralin
(*b*) Simazine
(*c*) Butachlore
(*d*) Glyphosate

(*iv*) Percentage of nitrogen in the farm yard manure is :

(*a*) 0.03%
(*b*) 0.5%
(*c*) 1.0%
(*d*) 3%

(*v*) Nitrogen percentage in NH_4SO_4 is :

(*a*) 10%
(*b*) 15%
(*c*) 20%
(*d*) 30%

(*vi*) **Hollow heart in groundnut is due to the deficiency of**

(*a*) Mo

(*b*) B

(*c*) Mn

(*d*) Fe

(*vii*) **Sugacane crop is normally harvested when the brix percentage is :**

(*a*) **10%**

(*b*) **14%**

(*c*) **18%**

(*d*) **25%**

(*viii*) ***Chenopodium album* weed in wheat produces seeds :**

(*a*) **5000-10000**

(*b*) **10000-15000**

(*c*) **15000-20000**

(*d*) 20000-25000

(Continued)

(*ix*) **A fertilizer supplies single plant nutrients is :**

(*a*) DAP

(*b*) IFFCO

(*c*) NH_4SO_4

(*d*) MOP

(*x*) CO_2 **percentage in atmosphere is :**

(*a*) 0·3%

(*b*) 0·03%

(*c*) 3%

(*d*) 0·003%

SECTION – B

Descriptive type questions (Answer any *five*) : 6×5

5. What is drip irrigation ? Write down it's advantages and disadvantages.

6. Define Biofertilizer. Narrate about different types of biofertilizers with good examples.

7. Define tillage and tilth. Write down the objectives of tillage. How tillage affect different physical properties of soil ?

(Turn Over)