

2023

AGS 5th Semester Examination

B.Sc. Hons. in Agriculture

**Manures, Fertilizers and Soil Fertility
Management**

PAPER — 502

Full Marks : 50

Time : 2 hours

The figures in the right-hand margin indicate marks.

*Candidates are required to give their answers
in their own words as far as practicable.*

Illustrate the answers wherever necessary.

Answer from **all** the Groups as directed.

GROUP—A

1. Answer any **five** questions from the following :
2×5=10

(a) Define manures.

- (b) Explain fertilizers.
- (c) What are meant by 'Beneficial elements'? Distinguish between primary nutrients and secondary nutrients.
- (d) What is composting?
- (e) Which nutrient elements are involved in enzyme activation and electron transfer?
- (f) Explain fertilizer mixture.
- (g) Distinguish between soil fertility and productivity.
- (h) Mention the plant available forms of Mo, B, Fe and Cl.

GROUP—B

2. Answer *any four* questions from the following :
5×4=20

- (a) What is bulky organic manure? Write three characteristics of bulky organic manure. 5
- (b) Who recommended the trench method of FYM preparation? Write in brief about the salient process involved in this method. 5

(3)

- ~~(c)~~ What are the advantages and disadvantages of green manuring? 3+2
- (d) Briefly explain about vermicompost. 5
- (e) Describe the relationship between soil pH and nutrient availability. 5
- ~~(f)~~ Discuss the mechanisms of nutrient transport to plants and highlight the factors affecting nutrient availability in the soil. 5

GROUP—C

3. Answer any two questions from the following :
10×2=20

- (a) What are different means of losses of nutrients from FYM during collection and storage? Write briefly about the ways to minimize these losses. 10
- (b) Write down the criteria of essentiality of nutrients. Which nutrient is responsible for greenhouse gas production? Write the deficiency symptoms of N, P, K, Zn and B nutrients. 3+2+5
- ~~(c)~~ What is Integrated Nutrient Management (INM)? What are the major components of INM? 6+4

(4)

(d) Write short notes on the following :

$2\frac{1}{2} \times 4 = 10$

- (i) Brown manuring
- (ii) DRIS
- (iii) Nano fertilizer
- (iv) *Rhizobium*

