[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 2442 **F–4** **Your Roll No.....**

Unique Paper Code : 2162501

Name of the Course : **Allied Subject : Zoology**

Name of the Paper : Economic Botany and Plant Biotechnology

Semester : IV

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **Five** questions in all including Question No. **1** which is compulsory.
3. **All** parts of a question must be answered together.
4. **All** questions carry equal marks.

1. (a) Fill in the blanks : (1×5=5)

   (i) A new synthetic textile fibre called ..... is manufactured from peanut protein.

   (ii) ....., an acute anaemic condition, results from eating uncooked or partially cooked *Vicia faba*.

   (iii) The state with highest production of black pepper in India is ..... .

   (iv) The chief chemical constituent of clove is ..... .

   (v) .....is a new world crop.

P.T.O.

(b) Match the following : (1×5=5)

(i) M.S. Swaminathan	(a) PCR
(ii) N.I. Vavilov	(b) DNA fingerprinting
(iii) Temin and Baltimore	(c) *Sharbati Sonora*
(iv) Karry Mullis	(d) Reverse transcriptase
(v) Alec Jeffery	(e) "Centres of origin" of cultivated plants

(c) Expand the following **(any five)** : (1×5=5)

(i) EST

(ii) ELISA

(iii) ICRISAT

(iv) RFLP

(v) ddNTPs

(vi) AGE

2. (a) Briefly describe the following **(any four)** : (4×1.5=6)

(i) Golden tips of tea

(ii) Geocarpic fruit

(iii) DNA polymerase

(iv) Micropropagation

(v) Totipotency

(vi) Artificial seeds

(b) Differentiate between **(any three)** : (3×3=9)

(i) Southern and Western blotting

(ii) Green tea and Black tea

(iii) Maxam-Gilbert and Sanger's method for sequencing

(iv) Vegetable oils and fats

3. Write short notes **(any three)** : (5×3=15)

(i) Processing of cotton

(ii) DNA fingerprinting

(iii) RAPD

(iv) Gene therapy

(v) Embryo culture

4. (a) Give the common name, family, economically important part and uses of the following crop plants **(any three)** :

(i) *Cicer arietinum*

(ii) *Gossypium hirsutum*

(iii) *Piper nigrum*

(iv) *Triticum aestivum*

(v) *Glycine max* (3×3=9)

(b) What is hybridoma technology ? Give few applications of this technique. (6)

5. (a) Draw well labelled diagram of the following **(any two)** :

(i) L.S. of clove bud

(ii) L.S. of peppercorn

(iii) L.S. of wheat grain (3×2=6)

(b) What is the importance of haploids in higher plants ? Give two methods of haploid production. (9)

6. (a) How has hexaploid wheat evolved from its wild relatives in nature. Illustrate with suitable crosses. (7.5)

(b) Define biotechnology. How is it useful for mankind. (7.5)