

16P/300/2

(To be filled up by the candidate by blue/black ball-point pen)

Roll No.

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Roll No. (Write the digits in words) .....

Code No. (473)

Serial No. of OMR Answer Sheet .....

(2016)

Day and Date .....

(Signature of Invigilator)

## INSTRUCTIONS TO CANDIDATES

(Use only blue/black ball-point pen in the space above and on both sides of the Answer Sheet)

1. Within 10 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing. In case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall except the Admit Card without its envelope.
3. A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.
6. No overwriting is allowed in the entries of Roll No., Question Booklet no. and Set no. (if any) on OMR sheet and Roll No. and OMR sheet no. on the Question Booklet.
7. Any change in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfair means.
8. Each question in this Booklet is followed by four alternative answers. For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet.
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit only OMR Answer Sheet at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

Total No. of Printed Pages : 28

[उपर्युक्त निर्देश हिन्दी में अन्तिम आवरण पृष्ठ पर दिये गए हैं।]

16P/300/2

**ROUGH WORK**

रफ़ कार्य

**16P/300/2**

**No. of Questions : 120**

**Time : 2 Hours**

**Full Marks : 360**

**Note :** (1) Attempt as many questions as you can. Each question carries **3 (Three)** marks. **One mark will be deducted for each incorrect answer. Zero** mark will be awarded for each unattempted question.

(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

**01.** The art of growing and reproducing a forest is known as :

- |                  |                 |
|------------------|-----------------|
| (1) Silviculture | (2) Mensuration |
| (3) Ecology      | (4) Ecosystem   |

**02.** Identification of trees according to species is called :

- |              |                |
|--------------|----------------|
| (1) Forestry | (2) Silvics    |
| (3) Ecology  | (4) Dendrology |

**03.** A mixed stand is one in which less than .....% of the trees are of same species :

- |              |              |
|--------------|--------------|
| (1) 75 to 80 | (2) 60 to 70 |
| (3) 50       | (4) 30 to 40 |

**04.** Day length or ..... influences diameter growth in trees :

- |                    |                      |
|--------------------|----------------------|
| (1) Photoperiod    | (2) Photorespiration |
| (3) Photosynthesis | (4) Respiration      |

**05.** In India plantation forestry was started in :

- |          |          |
|----------|----------|
| (1) 1942 | (2) 1842 |
| (3) 1947 | (4) 1847 |

**06.** Living fossil is :

- |                             |                   |
|-----------------------------|-------------------|
| (1) Rhododendron spp.       | (2) Gingko biloba |
| (3) Sesquioia semeperverens | (4) Coelacanth    |

**07.** The study of life history and general characteristics of forest trees and crops with reference to environment is called :

- |                  |             |
|------------------|-------------|
| (1) Silviculture | (2) Silvics |
| (3) Agronomy     | (4) Ecology |

**08.** Shorea robusta is :

- |                              |                          |
|------------------------------|--------------------------|
| (1) Susceptible to drought   | (2) Drought hardy        |
| (3) Moderately drought hardy | (4) Highly drought hardy |

09. Nitrogen fixing non-leguminous tree is :
- |               |               |
|---------------|---------------|
| (1) Dalbergia | (2) Acacia    |
| (3) Leucaena  | (4) Casuarina |
10. The dieback is common disease in :
- |          |            |
|----------|------------|
| (1) Teak | (2) Deodar |
| (3) Sal  | (4) Sissoo |
11. Arrangement of individual soil particles into aggregates is called :
- |                  |                    |
|------------------|--------------------|
| (1) Soil class   | (2) Soil structure |
| (3) Soil texture | (4) Soil group     |
12. A succession in which vegetation affects the ecosystems to bring about consequent changes is called :
- |                          |                         |
|--------------------------|-------------------------|
| (1) Cyclic succession    | (2) Primary succession  |
| (3) Secondary succession | (4) Seasonal succession |
13. Indian forests are classified into forest types based on ..... classification :
- |                   |                       |
|-------------------|-----------------------|
| (1) Mayr          | (2) Koppen            |
| (3) Seth and Khan | (4) Champion and Seth |
14. Mature sorghum plant roots can extract soil moisture from up to :
- |                  |                  |
|------------------|------------------|
| (1) 50 cm depth  | (2) 100 cm depth |
| (3) 150 cm depth | (4) 200 cm depth |

**15.** Sorghum forage poisoning is caused by :

- |                 |                      |
|-----------------|----------------------|
| (1) Fumic acid  | (2) HCN              |
| (3) Oxalic acid | (4) Gibberellic acid |

**16.** Scion is :

- |                    |                   |
|--------------------|-------------------|
| (1) Graft of shoot | (2) Graft of root |
| (3) A bud          | (4) Clone         |

**17.** The sustainable land use systems involving trees combined with crops and/or animals on the same unit of land is termed as :

- (1) Agroforestry
- (2) Sustainable forest management
- (3) Social forestry
- (4) Farm forestry

**18.** Social forestry was first coined by :

- |             |          |
|-------------|----------|
| (1) Westoby | (2) Shah |
| (3) Brandis | (4) Nair |

**19.** Taungya was first introduced by :

- |                 |                 |
|-----------------|-----------------|
| (1) Dr. Brandis | (2) Nair        |
| (3) Clements    | (4) L.S. Khanna |

20. The practice of managing rows of closely planted woody plants with annual crops planted in alleys in between hedges is called as :
- (1) Hedge row intercropping      (2) Woody hedgerows  
(3) Soil conservation hedges      (4) Multipurpose tree gardens
21. The most suitable species for reclamation of sandy soils is :
- (1) *Casuarina equisetifolia*      (2) *Acacia* spp.  
(3) *Melia dubia*      (4) *Azadirachta indica*
22. Agroforestry D & D covering entire ecological zone within a country is known as :
- (1) Macro D & D      (2) Micro D & D  
(3) Meso D & D      (4) Technology design
23. Jhuming is the other name of :
- (1) Shifting cultivation      (2) Taungya  
(3) Permaculture      (4) Biodynamic agriculture
24. For pearl millet cultivation, India has been divided into ..... ecological zone :
- (1) 4      (2) 5  
(3) 6      (4) 7

25. Based on the nature of components, Nair (1985) classified the Agroforestry system into ..... Groups :

- |          |             |
|----------|-------------|
| (1) Four | (2) Five    |
| (3) Six  | (4) Sixteen |

26. A hormone which is also known as stress hormone in plants is :

- |                  |           |
|------------------|-----------|
| (1) ethylene     | (2) auxin |
| (3) gibberellins | (4) ABA   |

27. Nitrogen fixing ability of Casuarina is attributable to :

- |                 |                  |
|-----------------|------------------|
| (1) Azotobacter | (2) Frankia      |
| (3) Rhizobium   | (4) Azospirillum |

28. Shifting cultivation is most prevalent in :

- |                            |                            |
|----------------------------|----------------------------|
| (1) North East India       | (2) Eastern part of India  |
| (3) Northern part of India | (4) Southern part of India |

29. Central Arid Research Institute is located at :

- |              |              |
|--------------|--------------|
| (1) Jabalpur | (2) Jhansi   |
| (3) Jodhpur  | (4) Dehradun |



30. ICFRE is located at :

- |               |              |
|---------------|--------------|
| (1) New Delhi | (2) Dehradun |
| (3) Jhansi    | (4) Ibadan   |

31. Green gold is :

- |            |            |
|------------|------------|
| (1) Sal    | (2) Sandal |
| (3) Bamboo | (4) Teak   |

32. Home garden is highly suitable for :

- |                            |                           |
|----------------------------|---------------------------|
| (1) Humid/sub humid region | (2) Arid/semi arid region |
| (3) Hilly region           | (4) High lands            |

33. Generally Shelter belt assumes the shape of :

- |                |                 |
|----------------|-----------------|
| (1) Quadrangle | (2) Rectangle   |
| (3) Triangle   | (4) Trapezoidal |

34. The combination of wheat with eucalyptus was common in :

- |               |               |
|---------------|---------------|
| (1) Punjab    | (2) Rajasthan |
| (3) Karnataka | (4) Orissa    |

**35.** The queen of timbers is :

- |               |                |
|---------------|----------------|
| (1) Rose wood | (2) Vagai      |
| (3) Teak      | (4) Eucalyptus |

**36.** Agroforestry practice of growing Albizia lebbeck with sorghum is called :

- (1) Hydromorphic system
- (2) Xexomorphic system
- (3) Mesophytic system
- (4) Geomorphic system

**37.** Silvipasture means :

- (1) Growing trees with grass
- (2) Growing trees with annuals
- (3) Growing trees with fruit crops
- (4) Growing trees with medicinal plants

**38.** On slopping ground, the dbh should be measured on :

- |                    |                         |
|--------------------|-------------------------|
| (1) Down hill side | (2) Accessible side     |
| (3) Up hill side   | (4) Non accessible side |

39. Breaking of seed dormancy by low temperature treatment of moist seed is termed as :

- |                    |                   |
|--------------------|-------------------|
| (1) stratification | (2) vernalization |
| (3) seasification  | (4) hardening     |

40. Volume of log is calculated by using the following formula :

- |                          |                              |
|--------------------------|------------------------------|
| (1) $G/4 \times l$       | (2) $(g^2/4) \times l$       |
| (3) $(g / 4)^2 \times l$ | (4) $G/4 \times \frac{1}{2}$ |

41. Pressler's increment borer is used to determine :

- |                         |                      |
|-------------------------|----------------------|
| (1) Increment of a tree | (2) Height of a tree |
| (3) Volume of a tree    | (4) Age of a tree    |

42. The formula for converting d.o.b. into d.u.b. is :

- |                       |                       |
|-----------------------|-----------------------|
| (1) $g = g' - 2\pi t$ | (2) $g' = g - 2\pi h$ |
| (3) $g = d' - 2\pi t$ | (4) $g = g' - 2\pi h$ |

43. The branch of forestry which deals with the determination of dimension, form, age and increment of single trees, stands or whole woods either standing or after felling is called :

- |                 |                       |
|-----------------|-----------------------|
| (1) Dendrology  | (2) Forest management |
| (3) Dendrometry | (4) Forest protection |

**44.** Orthotropic growth refers to :

- |          |             |
|----------|-------------|
| (1) Tree | (2) Shrub   |
| (3) Herb | (4) Creeper |

**45.** Pigments which prevent photo oxidation of chlorophyll are :

- |                  |                   |
|------------------|-------------------|
| (1) Phycobillins | (2) Carotionoids  |
| (3) Phytochromes | (4) Cryptochromes |

**46.** The First Environmental Law in India was enacted in :

- |          |          |
|----------|----------|
| (1) 1950 | (2) 1960 |
| (3) 1970 | (4) 1980 |

**47.** Kanha National Park is located in :

- |                    |                   |
|--------------------|-------------------|
| (1) Karnataka      | (2) Uttar Pradesh |
| (3) Madhya Pradesh | (4) Assam         |

**48.** First Indian Forest Act was drafted in the year :

- |          |          |
|----------|----------|
| (1) 1865 | (2) 1848 |
| (3) 1894 | (4) 1927 |

49. The Head Quarters of Inspector General of Forest is in :
- |               |              |
|---------------|--------------|
| (1) Dehra Dun | (2) Missouri |
| (3) Delhi     | (4) Mumbai   |
50. The project tiger was launched in the year :
- |          |          |
|----------|----------|
| (1) 1972 | (2) 1995 |
| (3) 1973 | (4) 1980 |
51. First Indian Inspector General of forest was :
- |                      |                     |
|----------------------|---------------------|
| (1) Dietrich Brandis | (2) M.D. Chaturvedi |
| (3) Dr. Troup        | (4) Schlich         |
52. Gas released from paddy straw is :
- |             |            |
|-------------|------------|
| (1) Methane | (2) $CO_2$ |
| (3) $NO_2$  | (4) CO     |
53. The technical name of Earth Summit 1992 was :
- |  |
|--|
| (1) Convention on Biological Diversity |
| (2) Helsinki                           |
| (3) G 15                               |
| (4) Montreal Protocol                  |

54. Khus oil extracted from which species :

- |                           |                           |
|---------------------------|---------------------------|
| (1) Vatever zuzonoides    | (2) Saccharum spontaneum  |
| (3) Dactyloriza hategeria | (4) Pennisetum typhoideum |

55. Where ICFRE is situated :

- |                |               |
|----------------|---------------|
| (1) Coimbatore | (2) New Delhi |
| (3) Jabalpur   | (4) Dehradun  |

56. Which of these is a non-coppice :

- |               |              |
|---------------|--------------|
| (1) Dalbergia | (2) Albizzia |
| (3) Cedrus    | (4) Salix    |

57. C : N ratio is a measure of :

- |                             |                    |
|-----------------------------|--------------------|
| (1) Nitrate status in soil  | (2) Organic matter |
| (3) CO <sub>2</sub> in soil | (4) Biomass carbon |

58. Where is ICRAF situated :

- |             |               |
|-------------|---------------|
| (1) Nairobi | (2) Indonesia |
| (3) Rome    | (4) Pakistan  |

59. The primary purpose of blocking in field experimentation is to reduce :
- (1) experimental error                      (2) block error  
(3) replication error                      (4) treatment error
60. The error degree of freedom (DF) for 7 treatments laid out in latin square design (LSD) is :
- (1) 20    (2) 30  
(3) 36    (4) 42
61. Most resistant compound for degradation is :
- (1) Cellulose                                      (2) Hemicellulose  
(3) Lignin    (4) Protein
62. The correct sequence of nitrogen mineralization process is :
- (1) Ammonium  $\Rightarrow$  Amino Acid  $\Rightarrow$  Nitrate  $\Rightarrow$  Nitrite  
(2) Ammonium  $\Rightarrow$  Amino Acid  $\Rightarrow$  Nitrite  $\Rightarrow$  Nitrate  
(3) Amino Acid  $\Rightarrow$  Ammonium  $\Rightarrow$  Nitrite  $\Rightarrow$  Nitrate  
(4) Amino Acid  $\Rightarrow$  Ammonium  $\Rightarrow$  Nitrate  $\Rightarrow$  Nitrite





67. Which one type of the monsoon in India is responsible for most of the rainfall ?

- |                  |                  |
|------------------|------------------|
| (1) North - East | (2) North - West |
| (3) South - East | (4) South - West |

68. Which growth regulator is responsible for apical dominance ?

- |                 |                    |
|-----------------|--------------------|
| (1) Auxin       | (2) Cytokinin      |
| (3) Gibberellin | (4) Absciscic acid |

69. The law of optima was given by :

- |                  |              |
|------------------|--------------|
| (1) Wilcox       | (2) Blackman |
| (3) Mitscherlich | (4) Liebig   |

70. If a soil has  $EC > 4$ ,  $ESP > 15$  and  $pH < 8.5$  that will be :

- |                            |                 |
|----------------------------|-----------------|
| (1) Acidic soil            | (2) Saline soil |
| (3) Saline - alkaline soil | (4) Alkali soil |

71. Which one is 2 : 2 type clay mineral ?

- |                     |                 |
|---------------------|-----------------|
| (1) Kaolinite       | (2) Illite      |
| (3) Montmorillonite | (4) Vermiculite |

72. When only furrows are opened for sowing of the seed, that type of tillage is known as :

- |                           |                          |
|---------------------------|--------------------------|
| (1) Stubble mulch tillage | (2) Zero tillage         |
| (3) Minimum tillage       | (4) Conventional tillage |

73. "Everything else may wait but not agriculture" – the famous statement given by :

- |                           |                         |
|---------------------------|-------------------------|
| (1) Pt. Jawahar Lal Nehru | (2) Lal Bahadur Shastri |
| (3) Indira Gandhi         | (4) Mahatma Gandhi      |

74. The contribution of agriculture in GDP is continuously decreasing. This fact of the modern economy indicates that :

- (1) Dependency on agriculture is increasing
- (2) Dependency on agriculture is decreasing
- (3) No change in dependency on agriculture
- (4) Can't be said

75. How many agro-ecological zones in India are found ?  
(1) 15 (2) 18  
(3) 21 (4) 24
76. The minamata disease is caused by the toxicity of :  
(1) Cadmium (2) Arsenic  
(3) Lead (4) Mercury
77. Methane emission mostly occurs in :  
(1) Rice field (2) Wheat field  
(3) Cotton field (4) Maize field
78.  $LER > 1$  indicates that :  
(1) Pure cropping is disadvantageous  
(2) Intercropping is disadvantageous  
(3) Both are disadvantageous  
(4) Non one is disadvantageous
79. Under normal condition which type of absorption mostly takes place :  
(1) Active absorption (2) Passive absorption  
(3) Aerial absorption (4) Foliar absorption
80. Energy status of water at saturation is :  
(1) 0 (2)  $< 0$   
(3)  $> 1$  (4)  $\infty$

81. World Agroforestry Centre was initially known as :

- |             |            |
|-------------|------------|
| (1) NRCAF   | (2) ICRAF  |
| (3) ICRISAT | (4) ICARDA |

82. Available water is found in between :

- |              |              |
|--------------|--------------|
| (1) FC - TWP | (2) FC - PWP |
| (3) FC - UWP | (4) FC - IWP |

83. Which one amongst these potential is positive ?

- |                   |              |
|-------------------|--------------|
| (1) Matric        | (2) Osmotic  |
| (3) Gravitational | (4) Pressure |

84. According to LUCC, alluvial soils of Indo-Gangetic Plains comes under the group of :

- |               |              |
|---------------|--------------|
| (1) Class I   | (2) Class II |
| (3) Class III | (4) Class IV |

85. Which one amongst the group of plants is called drought resistant ?

- |            |           |
|------------|-----------|
| (1) $C_3$  | (2) $C_4$ |
| (3) Kharif | (4) Rabi  |

86. Reflectant type of antitranspirant is :

- |                 |              |
|-----------------|--------------|
| (1) PMA         | (2) Atrazine |
| (3) Hexadeconol | (4) Kaolin   |

87. Application of herbicides after sowing of the crop but before emergence is called :
- |                               |                                |
|-------------------------------|--------------------------------|
| (1) Fallow application        | (2) Pre plant application      |
| (3) Pre emergence application | (4) Post emergence application |
88. The herbicides that contain carbon in their molecules are called :
- |                            |                               |
|----------------------------|-------------------------------|
| (1) Soil active herbicides | (2) Foliage active herbicides |
| (3) Inorganic herbicides   | (4) Organic herbicides        |
89. Meiotic division of cells is also known as :
- |                        |                         |
|------------------------|-------------------------|
| (1) Reduction division | (2) Equatorial division |
| (3) Vertical division  | (4) Horizontal division |
90. A variety of crop developed by pure line selection is a :
- (1) Composite
  - (2) Synthetic
  - (3) Hybrid
  - (4) Population of plants with same genotype
91. Gamete in plants are :
- |              |               |
|--------------|---------------|
| (1) Haploid  | (2) Diploid   |
| (3) Triploid | (4) Polyploid |
92. The male sterile line in a cross to produce hybrid seed is known as :
- |            |            |
|------------|------------|
| (1) A line | (2) B line |
| (3) C line | (4) R line |

93. Wheat is a :

- |                                 |                            |
|---------------------------------|----------------------------|
| (1) Self pollinated crop        | (2) Cross pollinated crop  |
| (3) Often cross pollinated crop | (4) Self incompatible crop |

94. The seed rate (g/ha) of tomato is :

- |             |               |
|-------------|---------------|
| (1) 100-150 | (2) 400-500   |
| (3) 800-900 | (4) 1000-1100 |

95. Alternate bearing is most common in :

- |           |           |
|-----------|-----------|
| (1) Guava | (2) Pear  |
| (3) Apple | (4) Mango |

96. Blue colour tag is used for :

- |                     |                    |
|---------------------|--------------------|
| (1) Nucleus seed    | (2) Breeder seed   |
| (3) Foundation seed | (4) Certified seed |

97. *Diacrisia obliqua* is the scientific name of :

- |               |                             |
|---------------|-----------------------------|
| (1) Termite   | (2) Bihar hairy caterpillar |
| (3) Top borer | (4) Leaf hopper             |

98. *Albugo candida* is the causal organism of :

- |                             |                            |
|-----------------------------|----------------------------|
| (1) Late blight of potato   | (2) Early blight of potato |
| (3) White rust of crucifers | (4) Ergot of bajra         |

99. Reserve Bank of India was established in the year of :

- |          |          |
|----------|----------|
| (1) 1932 | (2) 1934 |
| (3) 1935 | (4) 1938 |

**100.** Panchayati Raj System in India was introduced at the recommendation of :

- (1) Ford Foundation Committee
- (2) Ashok Mehta Committee
- (3) Rakesh Mehta Committee
- (4) Balwant Rai Mehta Committee

**101.** Milk fever is caused due to the deficiency of :

- (1) Mg
- (2) P
- (3) Ca
- (4) K

**102.** A combination of trees + crops are called as :

- (1) Silvi – pasture
- (2) Agri – silvi culture
- (3) Agri – horti culture
- (4) Horti – Pasture

**103.** Slash and burn agriculture is also called as :

- (1) Alley cropping
- (2) Taungya cultivation
- (3) *Shifting* cultivation
- (4) Homegardens

**104.** The corner stone of agroforestry is :

- (1) Productivity
- (2) Profitability
- (3) *Adoptability*
- (4) Sustainability

105. If two components interact in such a way that yield of one component exceeds yield corresponding to its sole crop without affecting the yield of the other component, the interaction is known as :

- |                   |                   |
|-------------------|-------------------|
| (1) Complementary | (2) Supplementary |
| (3) Competitive   | (4) Mutualism     |

106. *Leucaena leucocephala* is the scientific name of :

- |             |            |
|-------------|------------|
| (1) Chikami | (2) Bakain |
| (3) Subabul | (4) Anjan  |

107. Mimosine is found in :

- |              |             |
|--------------|-------------|
| (1) Mulberry | (2) Mahua   |
| (3) Mulga    | (4) Subabul |

108. Mat nursery is related with :

- |           |            |
|-----------|------------|
| (1) Rice  | (2) Wheat  |
| (3) Maize | (4) Cotton |

109. Calculate the plant population of maize in 5000 m<sup>2</sup> area if sown at spacing of 50 × 20 cm. :

- |            |            |
|------------|------------|
| (1) 40,000 | (2) 50,000 |
| (3) 60,000 | (4) 70,000 |



110. One percent is equivalent to :
- |               |                |
|---------------|----------------|
| (1) 100 ppm   | (2) 1000 ppm   |
| (3) 10000 ppm | (4) 100000 ppm |
111. The 'Akiochi' disease of rice is due to :
- |                  |                                |
|------------------|--------------------------------|
| (1) B deficiency | (2) Al toxicity                |
| (3) Fe toxicity  | (4) H <sub>2</sub> S poisoning |
112. CAM system is prevalent in :
- |                  |               |
|------------------|---------------|
| (1) Arid legumes | (2) Pineapple |
| (3) Pearl millet | (4) Sorghum   |
113. Growing of annual crops in between the perennial crop is :
- |                    |                       |
|--------------------|-----------------------|
| (1) Relay cropping | (2) Inter - cropping  |
| (3) Alley cropping | (4) Multiple cropping |
114. White tip of maize is caused due to the deficiency of :
- |        |        |
|--------|--------|
| (1) Cu | (2) Mo |
| (3) Zn | (4) Fe |
115. Which design is suitable when fertility gradient is in two directions of the field :
- |                       |            |
|-----------------------|------------|
| (1) R.B.D.            | (2) L.S.D. |
| (3) Split-plot design | (4) C.R.D. |
116. Movement of P and K from soil to the root surface takes place due to :
- |                       |               |
|-----------------------|---------------|
| (1) Root interception | (2) Diffusion |
| (3) Mass flow         | (4) Osmosis   |

117. Which of the following is a  $C_4$  plant ?

- |             |           |
|-------------|-----------|
| (1) Rice    | (2) Wheat |
| (3) Soybean | (4) Maize |

118. The first mustard variety developed by somatic hybridization is :

- |                 |                   |
|-----------------|-------------------|
| (1) Pusa Bold   | (2) Pusa Jaikisan |
| (3) Pusa Agrani | (4) Pusa Kalyani  |

119. The cause of the great Bengal Famine was :

- |                   |                          |
|-------------------|--------------------------|
| (1) Blast of rice | (2) Brown spot of rice   |
| (3) Rust of wheat | (4) Karnal bunt of wheat |

120. Which among the following is another name for vitamin  $B_{12}$  ?

- |                   |                         |
|-------------------|-------------------------|
| (1) Niacin        | (2) Pyridoxal phosphate |
| (3) Cyanocobalmin | (4) Riboflavin          |

**ROUGH WORK**  
रफ़ कार्य

## अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली-काली बाल-प्वाइंट पेन से ही लिखें)

1. प्रश्न पुस्तिका मिलने के 10 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में लिफाफा रहित प्रवेश-पत्र के अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा। केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।
6. ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्नपुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्नपुस्तिका पर अनुक्रमांक और ओ० एम० आर० पत्र संख्या की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।
7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।
8. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिए आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।
9. प्रत्येक प्रश्न के उत्तर के लिए केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो संबंधित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
11. रफ कार्य के लिए प्रश्न-पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा उत्तर-पुस्तिका के अंतिम पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त केवल ओ एम आर उत्तर-पत्र परीक्षा भवन में जमा कर दें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की, भागी होगा/होगी।