

MAR (17) (34)

15P/202/2/2

6125

Set No. - I

Question Booklet No.

(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)

Serial No. of OMR Answer Sheet

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 also Roll No. and OMR sheet No. on the Question Booklet.
7. Any changes 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 ball-point 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 the 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.

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

Total No. of Printed Pages : 14

15P/202/2/2(Set - I)

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.

- ✓ 1. Which one of the following is endodermal in origin ?
- (1) Stomodaeum (2) Proctodaeum
(3) Mesenteron (4) Rectum
2. In mosquito type mouth parts, the food canal is formed by :
- (1) Hypopharynx (2) Labrum epipharynx
(3) Labium (4) Maxillae
3. The female mango leaf hopper lays its eggs :
- (1) inside the soil (2) on the stem
(3) inside the leaves (4) on the under surface of leaves
4. One spermatocyte produces how many spermatozoa ?
- (1) one (2) two (3) three (4) four
5. For preservation purpose, the coleopterous adults are pinned through :
- (1) left elytron (2) right elytron (3) prothorax (4) head
6. Which one of the following is a beetle ?
- (1) Trichoderma (2) Bioderma (3) Trichogramma (4) Trogoderma

(1)

P.T.O.

7. The pink boll worm of cotton belongs to which family ?
(1) Pieridae (2) Galleriidae (3) Gelechiidae (4) Phycitidae
8. In mustard saw-fly, which one of the following organ is saw like ?
(1) Mandibles (2) Ovipositor (3) Wings (4) Femur
9. DD-136 is a :
(1) Fungus (2) Bacteria (3) Protozoa (4) Nematode
10. The grubs of *Rhinoceros beetle* feed on :
(1) soft tissues of trunk (2) leaves
(3) decaying organic matter (4) roots
11. In relation to silk worm, DFLs means :
(1) disease free larvae (2) disease free leaves
(3) disease free layings (4) disease free lymphocytes
12. The honey queen bee has :
(1) no sting (2) sword or sickle shaped sting
(3) barbed sting (4) hexagonal sting
13. What property of water makes it universal solvent ?
(1) Low dielectric constant (2) Low molecular weight
(3) Colourless substance (4) Highly polar in nature
14. Hydrophytes have :
(1) Sunken stomata
(2) Dumble shaped stomata
(3) Kidney shaped stomata
(4) No stomata or functionless stomata
15. Mo is a part of the following enzyme :
(1) Protease (2) Lipase (3) Nitrogenase (4) Amylase
16. One of the following is an example of dead cell :
(1) Cambium cell (2) Phloem cell
(3) Xylem parenchyma cell (4) Xylem vessel

17. Which of the following enzyme has most important role in 'C4' plants ?
 (1) Hexokinase (2) Phosphoenolpyruvate carboxylase
 (3) Alcohol dehydrogenase (4) Ascorbate peroxidase
18. Photorespiration occurs in presence of :
 (1) Chloroplast and mitochondria
 (2) Mitochondria and golgi bodies
 (3) Chloroplast, peroxisome and mitochondria
 (4) Chloroplast, peroxisome and golgi bodies
19. Vernalization induces :
 (1) Seed germination (2) Vegetative growth
 (3) Seed formation (4) Flowering
20. Dimorphic chloroplast present in :
 (1) Wheat (2) Sugarcane (3) Mustard (4) Pea
21. Which one of the following is a herbicide ?
 (1) NAA (2) Kinetin (3) 2-4-D (4) Zeatin
22. The following pigment is completely soluble in water :
 (1) Chl a (2) Carotene
 (3) Anthocyanin (4) Xanthophyll
23. Activity of hydrolytic enzymes are induced by :
 (1) Ethylene (2) Gibberellins (3) Cytokinin (4) Auxins
24. Which amino acid of the following is the precursor of auxin biosynthesis ?
 (1) Tryptophan (2) Histidine
 (3) Phenylalanine (4) Cysteine
25. The crystal units of montmorillonite are held together by :
 (1) O-O linkage (2) O-H linkage
 (3) H-bonding (4) NH-bond

26. Which of the following characteristics helps in the identification of alkali soils ?
- (1) White/ash color layer of salts on soil surface
 - (2) Reddish color spot on soil surface
 - (3) Black spot on soil surface
 - (4) None of these
27. What amount of energy is released during the decomposition of one gram of dried organic matter added to soil ?
- (1) 4-5 kilocalories
 - (2) 8-10 kilocalories
 - (3) 16-20 kilocalories
 - (4) 20-24 kilocalories
28. Which of the following soil texture is highly susceptible to crusting ?
- (1) Loam
 - (2) Clay loam
 - (3) Silty clay
 - (4) Silty clay loam
29. Immobilization of nitrogen occurs when C : N ratio of organic matter is :
- (1) < 20 : 1
 - (2) 20-30 : 1
 - (3) > 30 : 1
 - (4) > 300 : 1
30. The safest method to dispose of the waste materials is :
- (1) Pouring in the river
 - (2) Pouring in the drain
 - (3) Burying in the soil
 - (4) Pouring in the pond
31. What is the lowest unit of soil classification ?
- (1) Family
 - (2) Type
 - (3) Phase
 - (4) Series
32. Vermicast is also known as :
- (1) Green gold
 - (2) Brown gold
 - (3) Black gold
 - (4) Red gold
33. Which of the following is a complex fertilizer ?
- (1) Single superphosphate
 - (2) Ammonium sulphate nitrate
 - (3) Ammonium phosphate
 - (4) Calcium ammonium nitrate
34. Which process is responsible for accumulation of materials in B horizons ?
- (1) Eluviation
 - (2) Illuviation
 - (3) Carbonation
 - (4) Oxidation
35. Which of the following element is called as micronutrient element ?
- (1) Zinc
 - (2) Copper
 - (3) Iron
 - (4) Molybdenum

36. Assessment of soil texture by feel method is done by :
 (1) Ball formation (2) Ribbon formation
 (3) Staining (4) Dryingpp
37. Mitochondria are self replicating organelles because they have :
 (1) Thylakoids (2) Oxysomes (3) Ribosomes (4) DNA
38. Which of the following is directly related to genetic engineering ?
 (1) Heterosis (2) Plasmid (3) Mutation (4) Apomixes
39. The first recombinant DNA was produced by :
 (1) Sanger (2) Pauling (3) Paul Berg (4) Khorana
40. Inheritance of a quantitative trait was firstly provided in *Nicotinana longiflora* by :
 (1) Jule (1906) (2) Nilsson-Ehle (1909)
 (3) R. M. East (1916) (4) Jinks & Mather (1948)
41. For self pollinated crops, the dominance genetic variance in line x tester analysis is equal to :
 (1) $2\sigma^2 sca$ (2) $\sigma^2 sca$ (3) $4\sigma^2 sca$ (4) $\sigma^2 sca/2$
42. If n = number of parents and s = sample size of the cross, the number of crosses required for partial diallel analysis can be obtained by the formula :
 (1) $ns/2$ (2) $n(ns)/2$ (3) ns (4) $2ns$
43. Additive genetic variance arises due to :
 (1) Differences between two heterozygotes
 (2) Differences between a heterozygote and a homozygote
 (3) Differences between two homozygotes
 (4) None of the above
44. First artificial interspecific hybrid was developed by :
 (1) R. W. Allard (2) P. H. Harvey
 (3) Thomas Fairchild (4) R. E. Comstock
45. Chromosome numbers usually vary from variety to variety in :
 (1) Sugarcane (2) Pea (3) Barley (4) Rye

46. A pair of homologous chromosome of different length is called :
(1) Homomorphic bivalent (2) Heteromorphic bivalent
(3) Bivalent (4) None of them
47. Bridges are seen in :
(1) Paracentric inversion (2) Pericentric inversion
(3) In both para & pericentric inversions (4) None of the above
48. Triticales are the examples of :
(1) Interspecific hybridization (2) Intergeneric hybridization
(3) Varietal hybridization (4) Southern hybridization
49. To plough one hectare of land in the traditional way, a farmer and his animal have to walk :
(1) 50 km (2) 60 km (3) 70 km (4) 80 km
50. To meet both qualitative and quantitative demand of rice in future, the only option is :
(1) Hybrid rice (2) Dwarf high yielding rice
(3) Aerobic rice (4) Designer rice
51. The term "Green Revolution" was coined by :
(1) M. S. Swaminathan (2) Norman E. Borlaug
(3) William Gadd (4) F. N. Ponnampereuma
52. Average weight of 1 acre furrow slice of soil is :
(1) 2 m lbs (2) 3 m lbs (3) 1.5 m lbs (4) 3.5 m lbs
53. The resistance to herbicides is caused by the increased activity of :
(1) Cytochrome P-450 enzymes (2) Riboflavin monophosphate
(3) Catalase (4) Lactate dehydrogenase
54. The ground water table depth is measured by :
(1) Gypsum block (2) Piezometer (3) Neutronprobe (4) Odometer
55. Mycorrhiza is associated with :
(1) Stem (2) Leaf (3) Root (4) Flower

56. Brown manuring is recommended in :
(1) Sorghum (2) Pigeonpea (3) Rice (4) Mustard
57. Integrated farming system is the component of :
(1) Farming system research (2) Farming system
(3) Diversified farming (4) Specialised farming
58. The best stage for applying gypsum to groundnut is :
(1) Basal (2) One month after sowing
(3) Pre-flowering (4) Pegging
59. World Water Day is :
(1) 22nd March (2) 22nd April (3) 23rd May (4) 15th June
60. The first cotton hybrid (Shankar-4) was developed in :
(1) 1979 (2) 1970 (3) 1980 (4) 1985
61. What is the current annual milk production in India ?
(1) 98 Million Tonnes (2) 108 Million Tonnes
(3) 132 Million Tonnes (4) 152 Million Tonnes
62. What is the rank of India in world buffalo population ?
(1) 1st (2) 2nd
(3) 3rd (4) None of the above
63. Milk fat is commonly analyzed by :
(1) Soxhlet apparatus (2) Toluene distillation method
(3) Gerber's method (4) None of the above
64. pH of normal, fresh cow and/or buffalo milk ranges between :
(1) 6.0 to 6.4 (2) 6.4 to 6.8
(3) 6.8 to 7.2 (4) None of the above
65. Batch pasteurization imply heating of milk for :
(1) 72°C for 30 minutes (2) 72°C for 15 seconds
(3) 63°C for 30 minutes (4) 63°C for 15 seconds
66. The act of mating in horse is called as :
(1) Covering (2) Whelping (3) Coupling (4) Serving

67. Which of the following is *not* a proximate principle ?
(1) Moisture (2) Crude Protein
(3) Crude Fibre (4) Minerals and vitamins
68. Which Indian poultry breed is famous for its fighting quality ?
(1) Aseel (2) Busra (3) Karaknath (4) Brahma
69. Ranikhet disease occurs in :
(1) Cattle and buffalo (2) Sheep
(3) Pig (4) Poultry
70. As per PFA standard (1976) table butter should contain cream not less than :
(1) 60% (2) 70% (3) 80% (4) 90%
71. Ripening is done in the manufacture of :
(1) Ghee (2) Cheese (3) Ice-cream (4) Khoa
72. Dried skimmed milk powder should not contain moisture more than :
(1) 12% (2) 10% (3) 8% (4) 4%
73. Which one of the following pathogens produces zoospore ?
(1) *Colletotrichum falcatum* (2) *Dreschlera oryzae*
(3) *Puccinia tritici* (4) *Pythium aphanidermatum*
74. Which one of the following fungicide is systemic in nature ?
(1) Dithane M-45 (2) Captan (3) Metalaxyl (4) Thiram
75. Which of the following causes Molya disease of cereals ?
(1) *Heterodera avenae* (2) *Xiphinema index*
(3) *Longidorus elongatus* (4) *Anguina tritici*
76. The causal agent of Green ear disease of pearl millet is :
(1) *Peronosclerospora sorghi* (2) *Hyaloperonospora parasitica*
(3) *Plasmopora viticola* (4) *Sclerospora graminicola*
77. Teliospores are produced by :
(1) *Bipolaris sorokiniana* (2) *Albugo candida*
(3) *Melampsopora lini* (4) *Uromyces necator*

78. Periplasmic space is present in cell wall of :
 (1) Gram negative bacteria (2) Gram positive bacteria
 (3) L-form bacteria (4) Phytoplasma
79. What is produced from *Gelidium amansii* ?
 (1) Peptone (2) Agar agar (3) Dextrose (4) Antibiotics
80. Which one of the following is a bacterial disease ?
 (1) Black rot of crucifers (2) Black leg of crucifers
 (3) Club root of crucifers (4) None of the above
81. Biocontrol mechanism of *Trichoderma harzianum* is best described by :
 (1) Parasitism (2) Predation
 (3) Herbivory (4) All of the above
82. What symptoms are produced by a plant virus ?
 (1) Mosaic (2) Enation
 (3) Necrosis (4) All of the above
83. Which of the following is *not* an asexual fruiting body ?
 (1) Sporangium (2) Oospore (3) Oogonium (4) Zoospore
84. Which plant pathogen serve as a tool for transgenic plant development ?
 (1) *Anguina tritici* (2) *Podosphaera xanthii*
 (3) *Agrobacterium tumefaciens* (4) *Venturia inaequalis*
85. Which of the following is *not* an attribute of innovation ?
 (1) Punctuality (2) Compatibility (3) Complexity (4) Trialability
86. Which is *not* a step in the extension programme planning ?
 (1) Identification of problem
 (2) Analysis of situation
 (3) Collection of facts
 (4) Change in social norms and attitude
87. PLA tools do *not* involve :
 (1) Survey (2) Trend analysis
 (3) Household map (4) Transect walk

88. Marthandam project was started by :
(1) Spencer Hatch (2) Mahatma Gandhi
(3) F. L. Brayne (4) Ravindranath Tagore
89. Existing data gathered through library or office record is known as :
(1) Primary data (2) Projection
(3) Secondary data (4) Analysis of data
90. An entrepreneur's primary motivation for starting a business is :
(1) To make money (2) To be independent
(3) To be powerful (4) To be famous
91. Adopter category is based on :
(1) Education (2) Interest (3) Innovativeness (4) Innovation
92. The word "philosophy" is derived from :
(1) Spanish (2) Greek (3) French (4) Latin
93. The SMCR model of communication was proposed by :
(1) Leagons (2) Shannon and Weaver
(3) Wilbur Schramm (4) D. K. Berlo
94. The cone of experience was developed by :
(1) Edgar Dale (2) Thorndike (3) Berlo (4) Smith
95. When various aspects of culture in society change at unequal rates, the situation will be explained by the theory of :
(1) Social change (2) Globalization (3) Sanskritization (4) Cultural lag
96. Which of the following is the best criteria for choosing teaching aid ?
(1) Attractive and colorful (2) Easy to use
(3) Learner specific relevant to content (4) Made by teachers themselves
97. The term 'Macro Economics' was first coined by :
(1) Keynes (2) Ragner Frish
(3) Alfred Marshall (4) Lionel Robbins
98. In which of the following cases, demand curve shifts towards right side ?
(1) Extension of demand (2) Contraction of demand
(3) Decrease in demand (4) Increase in demand

99. In case of relatively inelastic demand, the elasticity is :
 (1) $E = \text{Infinity}$ (2) $E < 1$ (3) $E > 1$ (4) $E = 1$
100. In case of substitutes, the cross elasticity of demand is :
 (1) Positive (2) Negative (3) Zero (4) Infinity
101. Disposable income is given by :
 (1) Private income - Direct taxes (2) Private income + Direct taxes
 (3) Personal income - Direct taxes (4) Personal income + Direct taxes
102. Marginal propensity to consume is always :
 (1) Greater than zero (2) Greater than one
 (3) Less than zero (4) None of the above
103. In Net worth statement, liabilities are on side.
 (1) Left (2) Right (3) Middle (4) Not included
104. SBI was set up in :
 (1) 1945 (2) 1935 (3) 1965 (4) 1982
105. Elasticity of production at the end of zone II of production function is :
 (1) More than 1 (2) Less than 1 (3) Equal to 1 (4) Zero
106. Which of the following is irrational zone of production ?
 (1) I zone (2) II zone (3) III zone (4) I and III zone
107. When $MRTS = 0$, then the products are
 (1) Complementary (2) Supplementary
 (3) Competitive (4) Antagonistic
108. If marketed surplus is greater than marketable surplus, then the situation is known as :
 (1) Market efficiency (2) Market integration
 (3) Distress sale (4) None of the above
109. The pungent principle in chilli is :
 (1) Capxanthin (2) Anthocyanin
 (3) Capsaicin (4) Calcium oxalates

110. In which vegetable crop curing is done ?
(1) Onion (2) Brinjal (3) Carrot (4) Pumpkin
111. Whiptail in cauliflower is due to deficiency of :
(1) Calcium (2) Boron (3) Manganese (4) Molybdenum
112. Pusa Purple Cluster of Brinjal is resistant to :
(1) Drought (2) Mites (3) Purple Blotch (4) Bacterial Wilt
113. Pinching is commonly practiced for obtaining better flower production in :
(1) Rose (2) Marigold (3) Tuberose (4) Jasmine
114. Origin place of Gladiolus is :
(1) South Africa (2) Brazil (3) Mexico (4) Guatemala
115. Which medicinal plant has largest area in India ?
(1) Senna (2) Opium (3) Isabgol (4) Periwinkle
116. Total Soluble Solids (TSS) is measured by :
(1) Hand Refractometer (2) Colorimeter
(3) Spectrophotometer (4) Thermometer
117. Loose jacketed citrus fruits are :
(1) Sweet oranges (2) Mandarins (3) Limes (4) Lemons
118. Scientific name of lemon grass is :
(1) *Cymbopogon flexuosus* (2) *Melissa officinalis*
(3) *Artemisia pallens* (4) *Mentha citrate*
119. The first commercial transgenic vegetable crop is :
(1) Tomato (2) French bean (3) Brinjal (4) Cow pea
120. Coorg Honey Dew variety of papaya is :
(1) Dioecious (2) Gynodioecious
(3) Monoecious (4) Polygamous

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, प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न-पुस्तिका पर अनुक्रमांक संख्या 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 लिये आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार बाल-प्वाइंट पेन से गाढ़ा करना है।
9. प्रत्येक प्रश्न के उत्तर के लिये 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 सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
11. रफ कार्य के लिये इस पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा अंतिम खाली पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त केवल ओ० एम० आर० उत्तर-पत्र ही परीक्षा भवन में जमा करें।
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।