



Booklet Series

A

No. of Printed Pages : 16

Serial Number of the
Test Booklet

605721

PAPER CODE
PAPER/II-06/HEA

Roll No. : _____

Name of the Candidate : _____

Test Duration : 03 Hours

Total Questions : 100

Total Maximum Marks : 200

INSTRUCTIONS TO CANDIDATES

1. Candidates will be admitted to the Examination Hall/Room on production of their Admit Card and Original ID such as **EPIC/Aadhaar/Driving License** with a view to establish the true identity of the candidate.
2. Candidates shall reach the venue of examination at least 30 minutes in advance and admission will be refused to a candidate who is late by 10 minutes from the start of the examination.
3. No candidate shall be permitted to leave the Examination Hall/Room until the time for the examination is over or until permitted to do so but not until the half of the allotted time.
4. Candidates must use a **BLUE/BLACK** ball point pen ONLY to make entries on the OMR Answer Sheet.
5. The candidates should not bring any articles (other than those specified above) such as books, notes, loose sheets, mobile phones, pagers, digital diaries, calculators, smart watches, etc. inside the Examination Hall/Room. Any candidate found in possession of the said articles will be liable to be de-barred from applying all future examinations to be conducted by the Board.
6. After receiving the Test Booklet with OMR inserted, the candidates may pull out the OMR Answer Sheet and fill in the necessary details. However the candidates are not allowed to break open the seal of the Test Booklet until the invigilator informs them to do so.
7. Mark carefully your Roll Number, Question Booklet Code and Booklet Series on the OMR Answer Sheet and append signature at the appropriate place. Write your Roll Number and **Name in the Question Booklet**. In the absence of the Roll Number and Question Booklet Series on the OMR Answer Sheet, it may NOT be evaluated.
8. The entire Test is of Objective Type Questions comprising 100 questions.
9. Candidates must check that the Question Booklet contains 100 multiple choice questions. If any discrepancy found, report to the invigilator immediately.
10. Every question carries a total of 2 marks each. Candidates will also keep in mind that there is negative marking of $1/3^{\text{rd}}$ for every wrong answer.
11. Rough work may be done on the space provided in this Question Booklet, but not on the OMR Answer Sheet.
12. In the event of a mistake made in marking the Roll Number in the OMR Answer Sheet or the OMR Series the candidates will not be given a new OMR Answer Sheet but he/she will be allowed to use whitener or correcting fluid for correction of the Roll Number and the Booklet Series only.
13. **Change of answer will not be permitted in the OMR Answer Sheet. Using of correcting fluid (of any sort) will be treated as wrong attracting negative marking.**
14. The candidates must abide by such instructions as may be specified on the cover of the Answer Paper or instructions to candidates given at the back of the Admit Card. If a candidate fails to do so or indulges in improper conduct, he/she will render himself/herself liable to expulsion from the examination or such other punishment as the Board deemed fit to impose.
15. At the end of the Test, candidates must submit the OMR Answer Sheet to the invigilator on duty. Candidates shall be allowed to take their Question Booklet only after the end of the examination session.
16. Any candidate found to be intoxicated with alcohol and/or psychotropic substances will be expelled from the Examination Hall/Room.
17. Examination centre once opted cannot be changed.

PLEASE REFER THE BACKSIDE OF THE QUESTION BOOKLET FOR MORE INSTRUCTIONS.

SEAL



1. Which is one of the oldest techniques of top working trees ?

- (A) Tongue grafting
- (B) Veneer grafting
- (C) Whip grafting
- (D) Cleft grafting

2. Double working is in practice chiefly in

- (A) Mango (B) Pear
- (C) Banana (D) Citrus

3. In art principle of garden, Repetition of same object at equidistance is called

- (A) Balance (B) Accent
- (C) Rhythm (D) Vista

4. Which pre-conditioning solution is used to avoid ethylene injury and prolong shelf life in carnation ?



- (A) AgNO_3
- (B) 2-5% Sucrose
- (C) N-Benzyladenine
- (D) Potassium Permanganate

5. Khaddar and Bhangra geographical type of soil is present in

- (A) Black soil
- (B) Alluvial soil
- (C) Red soil
- (D) Laterite soil



6. One nucleoside is equal to



- (A) Sugar + Base only
- (B) Nucleotide + Phosphoric acid
- (C) Sugar + Nitrogenous base + Phosphate(H_3PO_4)
- (D) Nitrogenous base + Phosphorous

7. Progeny of nucleolus seed is called

- (A) Registered seed
- (B) Breeder seed
- (C) Certified seed
- (D) None of the above

8. In value of seed the impurity percentage is called



- (A) Genetic impurity
- (B) Physical impurity
- (C) Non-seed
- (D) Dockage

9. Which type of farming farmer has no surplus to sell in the market except on occasions when he has to forced sale to get some cash ?

- (A) Diversified farming
- (B) Multifarming
- (C) Specialized farming
- (D) Subsistence farming



10. The value of sum of deviations from mean is
(A) One (B) Zero
(C) -1 to +1 (D) 2
11. Calcium Ammonium Nitrate (CAN) contains _____ % Nitrogen.
(A) 26 (B) 30
(C) 46 (D) 50
12. Which of the following are not a method of reclamation of alkali soil ?
(A) Gypsum application
(B) Iron pyrite
(C) Lime application
(D) Green manure application
13. The degree of freedom for statistics for paired t-test of n pairs of observation is
(A) $n - 1$ (B) $n + 1$
(C) $0 < n > 1$ (D) $-1 > n < +1$
14. Which of the following pair is incorrect match regarding distributions ?
(A) Poisson distribution : Mean > Variance
(B) Normal distribution : Mean = Mode = Median
(C) Poisson distribution : Mean = Variance
(D) None of the above

15. The process of transfer of genetic information from DNA to mRNA during protein synthesis is called
(A) Translation
(B) Transcription
(C) Transgression
(D) Transporation
16. The native form of double stranded RNA is usually in _____ form.
(A) C-form (B) B-form
(C) A-form (D) D-form

17. Match the following disorder with cause.



Disorder	Cause
a. Sleepiness	i. Calcium deficiency
b. Topple	ii. Ethylene injury
c. Negative geotropism	iii. Manganese aluminium deficiency
d. Leaf scorch	iv. Uneven distribution of auxin
(A) a-ii, b-i, c-iii, d-iv	
(B) a-ii, b-i, c-iv, d-iii	
(C) a-i, b-ii, c-iii, d-iv	
(D) a-iii, b-i, c-ii, d-iv	



18. Chemical content present in cardamom

- (A) Piperine (B) Cineol
(C) Terbein (D) Phenol

19. Modified stem which grows horizontally to the ground above the surface of the soil is known as

- (A) Sucker (B) Corm
(C) Stolon (D) Rhizome

20. Which is the method of propagation of *Cordia myxa* ?

- (A) Softwood grafting
(B) Hardwood cutting
(C) Seed
(D) None of the above

21. Which of the following is not a principle of garden design ?

- (A) Unity
(B) Balance
(C) Rhythm
(D) Texture

22. Japanese flower arrangement is called as

- (A) Moribana
(B) Ikebana
(C) Morimona
(D) Nagiere

23. Which element is necessary for translocation of sugars and is involved in reproduction and germination of pollens ?

- (A) Zinc (B) Boron
(C) Copper (D) Calcium

24. Any soil of the azonal order without definite genetic horizons is known as

- (A) Regosol (B) Solum
(C) Regolith (D) Cat clays

25. Which of the following statements are true with respect to effect of self pollination ?

Statement (1) : Self pollination increases homozygosity.

Statement (2) : Self pollination decreases heterozygosity.

Statement (3) : Self pollination increases both homozygosity and heterozygosity.

- (A) Both Statements (1) and (2) are true
(B) Only Statement (1) is true
(C) Only Statement (2) is true
(D) Only Statement (3) is true

26. Which of the following mechanism promotes the cross pollination ?

- (A) Male sterility
(B) Protogyny
(C) Dicliny
(D) All of the above



27. The process of conversion of biomass into solid, liquid and gaseous energy is called as
 (A) Incineration
 (B) Pyrolysis
 (C) Fallout
 (D) Eutrophication
28. Principle of diminishing returns or increasing cost is explaining
 (A) Factor-Product relationship
 (B) Product-Product relationship
 (C) Factor-Factor relationship
 (D) Marginal productivity
29. Which of the following pairs are incorrectly matched regarding prevention/delay the microbial decomposition of the food ?
 (A) By keeping out the micro-organisms – Asepsis
 (B) By Removal of micro-organism – Filtration
 (C) By hindering the growth and activity of micro-organism – Aerobic condition
 (D) By killing the micro-organisms – Exposing at high temperature
30. Economic plant part used in *Cymbopogon winterianus*
 (A) Seeds
 (B) Leaves
 (C) Whole part
 (D) Roots

31. Which of the following statements are correct regarding Training ?

Statement 1 : Water sprouts should not be removed.

Statement 2 : Training should not be started from very beginning age of the tree.

Statement 3 : Most of the fruit trees are trained through single stem system.

- (A) Statements 1 and 2 are correct
 (B) Statements 2 and 3 are correct
 (C) Only Statement 3 is correct
 (D) Only Statement 2 is correct

32. Match the following growth regulators and its function in grape production.

Growth regulators	Functions
a. GA_3	i. To hasten bud break at winter pruning
b. HCN	ii. For increasing berry size
c. CCC	iii. For suppressing vigour of vine
(A) a-i, b-ii, c-iii	
(B) a-ii, b-i, c-iii	
(C) a-iii, b-i, c-ii	
(D) a-iii, b-ii, c-i	



33. Self blanched variety of cauliflower and which can grow in spring summer
(A) Pusa Subra
(B) Pusa Himjyoti
(C) Punjab Giant
(D) None of the above
34. Most common and cheapest method of Lawn planting is
(A) Seedling
(B) Turfing
(C) Dibbling of roots
(D) Bricking
35. Division of nucleus is called
(A) Cytokinesis
(B) Karyokinesis
(C) Interkinesis
(D) Heterokinesis
36. On completion of meiosis how many daughter cells are formed ?
(A) One (B) Two
(C) Three (D) Four
37. Alligator weed is botanically known as
(A) *Convolvulus arvensis*
(B) *Cyperus rotundus*
(C) *Eichhornia crassipes*
(D) *Alternanthera philoxeroides*
38. Exotic weeds become adapted to new country/region where introduced and established very well throughout the year are known as
(A) Naturalized weeds
(B) Adventives weeds
(C) Season bound weed
(D) Crop bound weed
39. Which of the following is 17th essential element ?
(A) Copper
(B) Iron
(C) Nickle
(D) Magnesium
40. Which element is required for biosynthesis of hormones ?
(A) Boron (B) Silicon
(C) Zinc (D) Cobalt
41. Laxative property present in
(A) Belladonna (B) Foxglove
(C) Henbane (D) Senna
42. Which of the following pairs are incorrectly matched ?
(A) *Curcuma longa* – Widely cultivated
(B) *Curcuma aromatica* – Kasturi manjal
(C) *Curcuma angustifolia* – Black ginger
(D) *Curcuma amada* – Mango ginger



43. Which of the following fruits is rich in Vitamin 'A' ?

- (A) Mango
- (B) Guava
- (C) Pomegranate
- (D) None of the above

44. Which of the following is short day plant ?

- (A) Passion fruit
- (B) Banana
- (C) Apple
- (D) Pineapple

45. Mallika mango hybrid crossing between



- (A) Neelum × Alphonso
- (B) Neelum × Dashehari
- (C) Alphonso × Neelum
- (D) None of the above

46. Genome constitution of Ney poovan

- (A) AAA (B) AA
- (C) AB (D) ABB

47. Which of the following is known as chicken tongue spice ?

- (A) Black pepper
- (B) Ginger
- (C) Turmeric
- (D) Clove

48. Bleached ginger is treated with

- (A) 2% lime water
- (B) 2-5% sucrose
- (C) 2% N-Benzene adenine
- (D) 1% H_2SO_4

49. The law of dominance is also called

- (A) Law of independent assortment
- (B) Law of segregation
- (C) Law of purity of gametes
- (D) Law of uniformity of first filial generation

50. In monogenic cross, the phenotypic ratio in F_2 generation were



- (A) 1 : 2 : 1
- (B) 9 : 3 : 3 : 1
- (C) 3 : 1
- (D) 1 : 2 : 2 : 1

51. Navashree and Nithyashree varieties are related to



- (A) Nutmeg
- (B) Cinnamon
- (C) Allspice
- (D) Vanilla



52. In Brinjal, which pest damages symptom is saw like damage in the marginal leaves ?



(A) Stem borer
(B) Black moth
(C) Ash weevil
(D) Leaf eating caterpillar



53. Which of the following pairs are correctly matched ?

(A) Complete root parasite – Striga spp. on tobacco
(B) Partial root parasite – Orobanche on sugarcane
(C) Complete stem parasite – Cuscuta on lucerne
(D) Partial stem parasite – Striga spp. on sugarcane

54. Which of the following is creeping perennial ?

(A) *Ipomea carnea*
(B) *Lantana camara*
(C) *Wild garlic*
(D) *Cirsium arvensis*

55. Which type Dominance where, one allele completely suppresses another allele ?



(A) Complete dominance
(B) Over dominance
(C) Incomplete dominance
(D) Co-dominance

56. In Asexual reproduction when seeds are formed but embryos are formed without fertilization this condition called as

(A) Apomixis
(B) Parthenocarpy
(C) Pseudogamy
(D) Diplospory

57. Citric acid present in fruit crops

(A) Avocado
(B) Guava
(C) Banana
(D) None of the above

58. Match the following parthenocarpy.

Fruits **Parthenocarpy**

a. Banana i. Stimulative
b. Litchi ii. Vegetative
c. Grape iii. Sternospermocarpy
(A) a-ii, b-i, c-iii
(B) a-iii, b-ii, c-i
(C) a-i, b-ii, c-iii
(D) a-iii, b-i, c-ii

59. Turnip yellow mosaic virus disease is transmitted through



(A) Whitefly
(B) Scales
(C) Flea beetle
(D) None of the above



60. Which of the following pair is incorrectly matched ?
- (A) Black rot – *Xanthomonas compestris*
 - (B) Curd rot – *Erwinia crotovera*
 - (C) White rust – *Erysiphe cichoracearum*
 - (D) Stalk rot – *Sclerotonia scleratium*

61. Which of the following is not a host plant of Lac insect ?
- (A) *Butea monosperma*
 - (B) *Zizyphus jujuba*
 - (C) *Schleichera oleon*
 - (D) *Jasminum sambac*



62. Trap which helps to trap insects moving about on the soil surface, such as ground beetles, collembola, spider is known as

- (A) Bait trap
- (B) Probe trap
- (C) Fish meal trap
- (D) Pitfall trap



63. Undesirable regardless of time or space always weed, this type of weed is known as

- (A) Absolute weeds
- (B) Relative weeds
- (C) Rouge weeds
- (D) Herbaceous weeds

64. Origin of *Lantana camara*

- (A) Eurasia
- (B) Europe
- (C) Tropical America
- (D) Africa

65. Spike tooth harrow is a type of implement

- (A) Tertiary tillage
- (B) Secondary tillage
- (C) Quaternary tillage
- (D) None of the above

66. Fallout word related to

- (A) Heavy metal pollution
- (B) Space pollution
- (C) Thermal pollution
- (D) Radioactive pollution

67. Papaya ring spot virus is transmitted by

- (A) Aphids
- (B) Whitefly
- (C) Leaf hopper
- (D) Flea beetle



68. Root wilt in coconut is caused by

- (A) Virus
- (B) MLO (Mycoplasma-like Organism)
- (C) Fungus
- (D) None of the above



69. Edible part of Litchi

- (A) Fleshy receptacle
- (B) Succulent placentae
- (C) Fleshy aril
- (D) Bracts

70. Which of the following vegetables with respiration rate of produce are correctly matched ?



- (A) Very low – Chilli, Carrot
- (B) Low – Cabbage, Beans
- (C) Very high – Leafy greens, Green onion
- (D) High – Sweet potato, Cabbage

71. Cider fermented beverage is prepared from the juice of

- (A) Palm
- (B) Grape
- (C) Apple
- (D) None of the above

72. Blue mould rot in fresh fruits and vegetables is caused due to

- (A) *Aspergillus niger*
- (B) *Botrytis cinerea*
- (C) *Saprophytic bacteria*
- (D) *Penicillium italicum*

73. Many individuals of same species of parasitoid attack a single host at a time is called



- (A) Simple parasitism
- (B) Super parasitism
- (C) Multi parasitism
- (D) Double parasitism

74. Dieback is major disease in _____ crop.

- (A) Carnation
- (B) Rose
- (C) Gladiolus
- (D) Chrysanthamum

75. Ribosomes are small cellular particles which are the sites of

- (A) Protein synthesis
- (B) Enzyme synthesis
- (C) Carbohydrate synthesis
- (D) Fat synthesis

76. The centre of the porphyrine ring of chlorophyll A and B contains a single atom of

- (A) Calcium
- (B) Magnesium
- (C) Manganese
- (D) Boron

77. Which tape is used for constructional works ?



- (A) Cloth tape
- (B) Metallic tape
- (C) Steel tape
- (D) Invar tape



78. Which of the following statements are correct regarding Drip irrigation ?



Statement 1 : Suitable for water scarcity area water saving 50-70% as compare to surface.

Statement 2 : Introduced from Israel.

Statement 3 : Typhoon system of drip irrigation is used for sugarcane modified drip.

- (A) Statements 1 and 2 are correct
- (B) Statements 2 and 3 are correct
- (C) Statements 1 and 3 are correct
- (D) Statements 1, 2 and 3 are correct

79. Faithful performance of communication process by all its elements is called as



- (A) Perception
- (B) Fidelity
- (C) Frame of reference
- (D) Entropy

80. Degree to which pairs of individuals who interact are different in certain attributes is

- (A) Homophily
- (B) Entropy
- (C) Cognitive dissonance
- (D) Heterophily

81. Which of the following growth regulator used as germination inhibitor, flowering inducer and also sex changer ?

- (A) TIBA
- (B) Triacntanol
- (C) Brassinolide
- (D) Daminozide

82. Which of the following pair is correctly matched ?



- (A) Tip layering – Blackberries
- (B) Serpentine layering – Walnut
- (C) Air layering – Banana
- (D) Stool layering – Papaya

83. Seed plot technique in potato was developed by

- (A) Dr. Puskarnath
- (B) Dr. Harbhajan Singh
- (C) Dr. K. L. Chadda
- (D) Dr. Arun Katyayan

84. Which of the following vegetable is rich in protein ?

- (A) Potato
- (B) Lima bean
- (C) Curry leaves
- (D) Tomato



85. Match the following causal organism and disease.



Disease	Causal organism
a. Web blight	i. <i>Isariopsis griseola</i>
b. Angular leaf spot	ii. <i>Ramularia phaseoli</i>
c. Floury leaf spot	iii. <i>Rhizoctonia solani</i>
d. Anthracnose	iv. <i>Colletotrichum lindemuthianum</i>

(A) a-iii, b-i, c-ii, d-iv

(B) a-i, b-iii, c-ii, d-iv

(C) a-iii, b-i, c-iv, d-ii

(D) a-ii, b-i, c-iii, d-iv

86. V-shape chlorosis on margin



of leaves significant symptom characteristic of _____ disease in cole crops.

(A) Stalk rot (B) Curd rot

(C) Soft rot (D) Black rot

87. The chemical used to reduce post harvest fruit drop in grape is

(A) NAA (50 ppm)

(B) IBA

(C) Cytokinin

(D) 2, 4 D

88. The term 'vitamin' was introduced by



(A) Funk (B) Robin

(C) Willium (D) W. Kunhe

89. Which of the following is mass method of communication ?

(A) Circular letter

(B) Lecture

(C) Meeting

(D) Personal letter

90. Which of the following is second-generation audio-visual aids according to evolution ?

(A) Handmade charts

(B) Slides

(C) Printed graphics

(D) Graphs

91. Pungency and flavours of onion due to

(A) Diallyl Disulphide

(B) Allyl-Propyl-Disulphide

(C) Dimethyl Trisulphide

(D) Diethyl Disulphide

92. Akashin physiological disorder in

(A) Potato

(B) Cabbage

(C) Cauliflower

(D) Radish



93. Filler plants are generally used in
(A) Square system
(B) Quincunx system
(C) Hexagonal system
(D) Contour system
94. Intermediate form of central leader system and open centre training system
(A) Open head system
(B) Centre leader system
(C) Modified leader system
(D) Pyramid system
95. Models made in correct proportion to the original object is
(A) Scale model
(B) Simplified model
(C) Working model
(D) Illustration
96. In collection decision making who screen the idea for approving or put sanction on it is
(A) Legitimizers
(B) Optional innovation decision
(C) Collection innovation
(D) Authority innovation decision
97. Witches broom in cucurbit disease is transmitted by
(A) Aphids
(B) Leaf hoppers
(C) Whitefly
(D) None of the above
98. Covering fruits with butter paper is control measure of
(A) Fruit borer
(B) Shoot gall maker
(C) Bark eating caterpillar
(D) Anar butterfly
99. _____ is essential component of all living cells, helps in body building.
(A) Calcium (B) Boron
(C) Potassium (D) Nitrogen
100. Which of the following pair is not correctly matched with nitrogen fixation organisms ?
(A) Free living Aerobic bacteria – *Azotobacter chroocum*
(B) Free living Anaerobic bacteria – *Clostridium*
(C) Associative symbiotic – *Azospirillum*
(D) Symbiotic fixation – *Azospirillum*