

Roll No.

Question Booklet Number

O. M. R. Serial No.

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M. Sc. (Fourth Semester)
(NEP) EXAMINATION, 2025-26
BOTANY
(Advanced Plant Pathology)

Paper Code							
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Questions Booklet
Series

D

Time : 1:30 Hours]

[Maximum Marks : 75

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।

(Remaining instructions on the last page)

(शेष निर्देश अन्तिम पृष्ठ पर)

(Only for Rough Work)

1. Who advanced the 'gene for gene' concept of disease resistance and susceptibility ?
 - (A) Muller
 - (B) Blackeslee
 - (C) Vander Planck
 - (D) Flor

2. U. P. Agricultural Diseases and Pests Act was enacted in :
 - (A) 1873
 - (B) 1914
 - (C) 1954
 - (D) 1966

3. Muriform conidia are found in :
 - (A) *Aspergillus*
 - (B) *Albugo*
 - (C) *Alternaria*
 - (D) *Cercospora*

4. Genuiculate conidiophores are found in :
 - (A) *Alternaria*
 - (B) *Cercospora*
 - (C) *Saprolegnia*
 - (D) *Aspergillus*

5. Heteroecious fungus are :
 - (A) *Ustilago*
 - (B) *Puccinia*
 - (C) *Melampsora*
 - (D) *Albugo*

6. Teleutospores of *Puccinia* are :
 - (A) Two-celled
 - (B) Three-celled
 - (C) Four-celled
 - (D) One-celled

7. The whip smut of sugarcane is caused by :
 - (A) *Ustilago scitamineae*
 - (B) *Ustilago avenae*
 - (C) *Puccinia striiformis*
 - (D) *Ustilago graminis*

8. Which is known as Green mold ?
 - (A) *Neurospora*
 - (B) *Mucor*
 - (C) *Penicillium*
 - (D) *Saccharomyces*

9. *Albugo* reproduces asexually by means of structures which are better called :
 - (A) Sporangia
 - (B) Canidiosporangia
 - (C) Conidia
 - (D) Oogonia

10. *Albugo candida* is :
- (A) Saprophytic fungus
 - (B) Parasitic fungus
 - (C) Autotrophic fungus
 - (D) Epizoic fungus
11. In which form reserve food material is stored by fungi ?
- (A) Glycogen
 - (B) Oil bodies
 - (C) Starch
 - (D) Alcohol
12. Haustoria are absent in :
- (A) *Cystopus*
 - (B) *Puccinia*
 - (C) *Claviceps*
 - (D) *Synchytrium*
13. Water mold is :
- (A) *Synchytrium*
 - (B) *Saprolegnia*
 - (C) *Agaricus*
 - (D) *Ustilago*
14. All fungi are :
- (A) Symbionts
 - (B) Parasites
 - (C) Saprophytes
 - (D) Heterotrophs
15. Rust of linseed is caused by :
- (A) *Protomyces macrosporus*
 - (B) *Taphrina maculens*
 - (C) *Melampsora lini*
 - (D) *Puccinia arachidis*
16. Karnal smut of rice is caused by :
- (A) *Tilletia* sp.
 - (B) *Puccinia* sp.
 - (C) *Neovossia* sp.
 - (D) *Fusarium* sp.
17. The secondary infection of black stem rust of wheat occurs through :
- (A) Basidiospores
 - (B) Uredospores
 - (C) Teleutospore
 - (D) Pycniospores

18. Which disease is known as 'Cancer of sugarcane' ?
- (A) Sugarcane wilt
 - (B) Red rot of sugarcane
 - (C) Whipsmut of sugarcane
 - (D) Mosaic of sugarcane
19. Bacterial leaf blight is also known as :
- (A) Kresek disease
 - (B) Tungro disease
 - (C) Both of the above
 - (D) Blast disease
20. Viroids can be transmitted through :
- (A) True seed
 - (B) Pollen grain
 - (C) Vegetative parts
 - (D) All of the above
21. Smut fungi usually affect plants belonging to :
- (A) Cyperaceae
 - (B) Poaceae
 - (C) Both (A) and (B)
 - (D) None of the above
22. Primary source of infection to green ear disease of Bajra is :
- (A) Insect
 - (B) Soil
 - (C) Seed and soil
 - (D) Air
23. Which is the first step in a plant disease cycle ?
- (A) Inoculation
 - (B) Infection
 - (C) Reproduction
 - (D) Presentation
24. What are the primary symptoms of stem gall disease in coriander ?
- (A) Leaf spot
 - (B) Yellowing of leaves
 - (C) Swollen, tumor-like galls on stems and leaves
 - (D) Root rot
25. What is the causal organism of stem gall disease in coriander ?
- (A) *Alternaria alternata*
 - (B) *Protomyces macrosporus*
 - (C) *Fusarium oxysporum*
 - (D) *Xanthomonas campestris*

26. Who worked on the epidemiology of cereal rusts in India ?
- (A) K. C. Mehta
 (B) L. M. Joshi
 (C) R. Prasada
 (D) All of the above
27. The coprophilous fungi inhabit :
- (A) Dung
 (B) Dead wood
 (C) Decaying leaves
 (D) Food
28. Genetic material of TMV is :
- (A) dsDNA
 (B) ssDNA
 (C) ssRNA
 (D) dsRNA
29. The causal organism of red rot of sugarcane is :
- (A) *Ustilago setamania*
 (B) *Corcospora personata*
 (C) *Colletotrichum falcatum*
 (D) *Fusarium udum*
30. Exclusion of plant diseases by legislation is known as :
- (A) Disease resistance
 (B) Eradication
 (C) Plant quarantine
 (D) Cultural control
31. Resistance genes are usually found in :
- (A) Wild plant
 (B) Cultivated plant
 (C) Native plant
 (D) Ornamental plant
32. Soil borne pathogen can be best managed by :
- (A) Fungicide application
 (B) Hot water treatment
 (C) Biological control
 (D) Integrated disease management strategy
33. Components of Bordeaux mixture are :
- (A) Copper sulphate + hydrated lime
 (B) Copper sulphate + Sodium chloride
 (C) Copper carbonate + hydrated lime
 (D) Copper nitrate + copper sulphate
34. Optimum pH range for fungal growth is around :
- (A) 4-6
 (B) 9-11
 (C) 6.5-7.5
 (D) 8-10

35. Agar-agar is produced from :
- (A) *Nostoc*
 - (B) *Gelidium*
 - (C) Yeast
 - (D) *Spirullina*
36. Burgundy mixture was first introduced by :
- (A) J. Robertson
 - (B) I. B. Prevost
 - (C) P. A. Milardet
 - (D) E. Masson
37. The famous Ireland famine was due to :
- (A) Early blight of potato
 - (B) Wart disease of potato
 - (C) Late blight of potato
 - (D) Downy mildew of grape
38. Who is regarded as father of plant disease epidemiology ?
- (A) Stakman
 - (B) De Bary
 - (C) Erickson
 - (D) J.E. Vanderplank
39. Which of the following organisms can serve as a biofertilizer for rice crop ?
- (A) *Rhizobium* sp.
 - (B) *Gelidium*
 - (C) *Trichoderma*
 - (D) *Nostoc*
40. Late blight pathogen of potato can overwinter in :
- (A) Insects
 - (B) Water
 - (C) Plant debris of potato
 - (D) Soil
41. Which of the following fungi produces alkaloids that are fatal to human beings ?
- (A) *Rhizopus* sp.
 - (B) *Albugo candida*
 - (C) *Erisiphe polygoni*
 - (D) *Claviceps purpurea*
42. The most effective and safest method of plant disease control is :
- (A) Chemical control
 - (B) Biological control
 - (C) Use of resistant varieties
 - (D) Crop rotation

43. Concentric ring or target board symptoms on the leaves is caused by :
- (A) *Cercospora*
 - (B) *Alternaria*
 - (C) *Albugo*
 - (D) *Phytophthora*
44. Virioids spread from cell to cell by :
- (A) Plasmodesmata
 - (B) Mobile protein
 - (C) Cell division
 - (D) RNA
45. Treatment of seed to eradicate plant pathogen from seed surface as well as from deep seated tissue is called as :
- (A) Seed priming
 - (B) Seed disinfection
 - (C) Seed disinfestation
 - (D) Both (B) and (C)
46. The reserve food in the phylum Oomycota is :
- (A) Glycogen
 - (B) Starch
 - (C) Cellulose
 - (D) Mycolaminarin
47. Primary source of infection of green ear disease of Bajra is :
- (A) Insect
 - (B) Soil
 - (C) Seed and soil
 - (D) Air
48. Teleutospores are sessile (stalk-less) in the rust fungus :
- (A) *Gymnosporangium*
 - (B) *Puccinia*
 - (C) *Uromyces*
 - (D) *Melampsora*
49. The causal agent of bacterial leaf blight of rice is :
- (A) *Pseudomonas cichorii*
 - (B) *Clavibacter michiganensis*
 - (C) *Xanthomons oryzae*
 - (D) *Streptomycin scabies*
50. The first broad spectrum antibiotic discovered is :
- (A) Chloramphenicol
 - (B) PCNB
 - (C) Penicillin
 - (D) Streptomycin

51. Biological control of plant diseases involves the use of :
- (A) Chemical pesticides
 - (B) Resistant varieties
 - (C) Living organisms
 - (D) Physical methods
52. The term 'biofungicide' refers to :
- (A) Synthetic fungicide
 - (B) Plant extract
 - (C) Microbial based fungicide
 - (D) Hormonal spray
53. Management of root knot in cabbage includes :
- (A) Crop rotation
 - (B) Resistant varieties
 - (C) Soil solarization
 - (D) All of the above
54. The characteristic symptom of root knot disease is :
- (A) Leaf spots
 - (B) Stem rot
 - (C) Gall formation on roots
 - (D) Wilting without root damage
55. Root Knot disease of cabbage is caused by :
- (A) Fungus
 - (B) Bacterium
 - (C) Virus
 - (D) Nematode
56. Mosaic viruses are mainly transmitted by :
- (A) Fungi
 - (B) Nematodes
 - (C) Insects like aphids
 - (D) Soil
57. Tobacco mosaic virus was first discovered by :
- (A) Robert Koch
 - (B) Dimitri Ivanovsky
 - (C) Louis Pasteur
 - (D) Alexander Fleming
58. Brown rot disease is commonly associated with :
- (A) Cotton
 - (B) Potato
 - (C) Rice
 - (D) Wheat
59. Sesamum phyllody is also known as :
- (A) Green ear disease
 - (B) Little leaf disease
 - (C) Phyllody disease
 - (D) Rust disease

60. The characteristic symptom of Sesamum phyllody is :
- (A) Leaf spots
 - (B) Wilting
 - (C) Floral parts converted into leafy structures
 - (D) Stem rot
61. The main vector of Sesamum phyllody is :
- (A) Whitefly
 - (B) Aphid
 - (C) Leaf hopper
 - (D) Thrips
62. Sesamum phyllody disease is caused by :
- (A) Virus
 - (B) Fungus
 - (C) Bacterium
 - (D) Phytoplasma
63. Induced Systemic Resistance (ISR) is mainly triggered by :
- (A) Viral infection
 - (B) Necrotrophic fungi
 - (C) Rhizobacteria
 - (D) Insect feeding
64. Systemic resistance provides protection :
- (A) Only at infection site
 - (B) Only in roots
 - (C) Throughout the plant
 - (D) Only in leaves
65. In Loose smut of wheat the Mearly recurrence is :
- (A) Internally seed-borne
 - (B) Externally seed-borne
 - (C) Soil-borne
 - (D) Air-borne
66. The abnormal increase in the size of a plant organ due to increase of number of cells is known as :
- (A) Hyperplasia
 - (B) Hypertrophy
 - (C) Wilt
 - (D) Canker
67. Which of the following is associated with leaf curl disease ?
- (A) *Ustilago*
 - (B) *Taphrina*
 - (C) *Puccinia*
 - (D) *Uromyces*

68. Damping-off of seedlings of vegetable crops is generally caused by :
- (A) *Pythium*
 - (B) *Peronospora*
 - (C) *Tilletia*
 - (D) *Erysiphe*
69. Root-knot of vegetable is caused by a :
- (A) Virus
 - (B) Bacterium
 - (C) Fungus
 - (D) Nematode
70. Phytoalexins produced by plants in response to fungal infection are :
- (A) Protein
 - (B) Lipid
 - (C) Glycoprotein
 - (D) Phenolic compound
71. Yeast is an important source of :
- (A) Vitamin A
 - (B) Vitamin B
 - (C) Vitamin C
 - (D) Vitamin D
72. The most common laboratory weed is :
- (A) *Claviceps*
 - (B) *Alternaria*
 - (C) *Penicillium*
 - (D) *Aspergillus*
73. Downy mildew disease is caused by :
- (A) *Albugo*
 - (B) *Phytophthora*
 - (C) *Peronospora*
 - (D) *Pythium*
74. Physiological specialization in stem rust of wheat demonstrated by :
- (A) Anton de Bary
 - (B) K. C. Mehta
 - (C) Ericson
 - (D) B.C. Mundukar
75. The father of seed pathology is :
- (A) S. B. Mathur
 - (B) V. K. Agarwal
 - (C) Paul Neergard
 - (D) C. V. Subramaniam
76. Quarantine measures are aimed at :
- (A) Increasing yield
 - (B) Preventing introduction of new pathogens
 - (C) Increasing soil fertility
 - (D) Improving irrigation

77. Which of the following fungi produces alkaloids that are fatal to human beings ?
- (A) *Rhizopus* sp.
 (B) *Albugo candida*
 (C) *Erisiphe polygoni*
 (D) *Claviceps purpurea*
78. High sugar pathogens are generally :
- (A) Biotroph
 (B) Necrotroph
 (C) Symbiotic
 (D) Saprophytes
79. Race concept in rust fungi was given by :
- (A) E. C. Stakman
 (B) Eriksson
 (C) H.M. Ward
 (D) Orton
80. The brown leaf spot of rice that caused the great famine of Bengal in 1943 was due to :
- (A) *Protomyces macrospora*
 (B) *Alternaria solani*
 (C) *Helminthosporium oryzae*
 (D) *Pythium debarynum*
81. Most fungi grow best at pH :
- (A) 4-6
 (B) 9-11
 (C) 6.5-7.5
 (D) - 10
82. Late blight pathogen belongs to :
- (A) True fungi
 (B) Bacterium
 (C) Oomycetes
 (D) Virus
83. The cause for annual recurrence of rust disease in India was discovered by :
- (A) R. N. Singh
 (B) T. Sadasivan
 (C) K. C. Mehta
 (D) None of the above
84. Smut attack mostly :
- (A) Leaves
 (B) Flowers
 (C) Roots
 (D) Seeds

85. Mycoparasitism is associated with :
- (A) *Alternaria*
 - (B) *Pythium*
 - (C) *Albugo*
 - (D) *Trichoderma*
86. Pectin degrading enzymes are produced by :
- (A) Bacteria
 - (B) Nematode
 - (C) Fungi
 - (D) All of the above
87. Which of the following is an internally borne pathogen ?
- (A) *Ustilago avenae*
 - (B) *Ustilago hordei*
 - (C) *Erisiphe polygoni*
 - (D) *Synchytrium endobioticum*
88. Nematodes attach to the plant surface by :
- (A) Adhesion pad
 - (B) Adhesive substances
 - (C) Suction
 - (D) All of the above
89. The modified hyphal structure that helps the fungal pathogen to enter the plants is :
- (A) Rhizomorph
 - (B) Appressorium
 - (C) Haustorium
 - (D) Chlamydospore
90. Bacteria penetrate plants mostly through :
- (A) Wounds
 - (B) Natural openings
 - (C) Direct means
 - (D) All of the above
91. Rust of pea is caused by :
- (A) *Puccinia graminis*
 - (B) *Uromyces ciceri arietini*
 - (C) *Uromyces setariae*
 - (D) *Uromyces fabae*
92. Potato leaf roll is caused by which virus ?
- (A) Potato virus X
 - (B) Potato virus Y
 - (C) Potato virus A
 - (D) Potato leaf roll virus

93. The basic mechanism involved in biological control of plant disease is related with :
- (A) Competition
 - (B) Induction of plant defense
 - (C) Parasitism
 - (D) All of the above
94. The most effective fungicide against powdery mildew fungi is :
- (A) Bavistin
 - (B) Mancozeb
 - (C) Zineb
 - (D) Karathane
95. Which of the following is a fungicide ?
- (A) 2-4D
 - (B) D.D.T.
 - (C) Bordeaux mixture
 - (D) None of the above
96. The symptoms caused by viruses except :
- (A) Chlorosis
 - (B) Vein-clearing
 - (C) Yellowing
 - (D) Little leaf
97. The cause of 'Chlorosis' in plants is :
- (A) Deficiency of Mn
 - (B) Excess of Mn
 - (C) Excess of Mg
 - (D) Deficiency of Mg
98. Diethane M-45 is a/an :
- (A) Insecticide
 - (B) Weedicide
 - (C) Growth regulator
 - (D) Fungicide
99. Physiological specialization in stem rust of wheat was demonstrated first time by :
- (A) Anton de Bary
 - (B) Stakman and Levine
 - (C) Ericson
 - (D) B. C. Mundukar
100. Each aeciospore of *Puccinia graminis* has :
- (A) One nucleus
 - (B) Two nuclei
 - (C) Three nuclei
 - (D) Many nuclei

(Only for Rough Work)

4. Four alternative answers are mentioned for each question as—A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

Example :

Question :

- Q. 1 (A) ● (C) (D)
 Q. 2 (A) (B) ● (D)
 Q. 3 (A) ● (C) (D)

Illegible answers with cutting and over-writing or half filled circle will be cancelled.

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager and cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. : On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर—A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छाँटना है। उत्तर को OMR आन्सर-शीट में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

उदाहरण :

प्रश्न :

- प्रश्न 1 (A) ● (C) (D)
 प्रश्न 2 (A) (B) ● (D)
 प्रश्न 3 (A) ● (C) (D)

अपठनीय उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, या गोले में आधा भरकर दिया गया, उन्हें निरस्त कर दिया जाएगा।

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका के अन्त में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैलकुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण : प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।