Roll No. .....

Question Booklet Number

O. M. R. Serial No.

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

Paper Code							
B	0	4	1	0	0	2	T

Questions Booklet Series
B

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. Each aeciospore of Puccinia graminis has :

(A) One nucleus

(B) Two nuclei

(C) Three nuclei

(D) Many nuclei

2. 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

3. Diethane M-45 is a/an :

(A) Insecticide

(B) Weedicide

(C) Growth regulator

(D) Fungicide

4. The cause of 'Chlorosis' in plants is :

(A) Deficiency of Mn

(B) Excess of Mn

(C) Excess of Mg

(D) Deficiency of Mg

5. The symptoms caused by viruses except :

(A) Chlorosis

(B) Vein-clearing

(C) Yellowing

(D) Little leaf

6. Which of the following is a fungicide ?

(A) 2-4D

(B) D.D.T.

(C) Bordeaux mixture

(D) None of the above

7. The most effective fungicide against powdery mildew fungi is :

(A) Bavistin

(B) Mancozeb

(C) Zineb

(D) Karathane

8. 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

9. 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

10. Rust of pea is caused by :

(A) *Puccinia graminis*

(B) *Urobyces ciceri arietini*

(C) *Uromyces setariae*

(D) *Uromyces fabae*

11. Bacteria penetrate plants mostly through :

(A) Wounds

(B) Natural openings

(C) Direct means

(D) All of the above

12. The modified hyphal structure that helps the fungal pathogen to enter the plants is :

(A) Rhizomorph

(B) Appresorium

(C) Haustorium

(D) Chlamydospore

13. Nematodes attach to the plant surface by :

(A) Adhesion pad

(B) Adhesive substances

(C) Suction

(D) All of the above

14. Which of the following is an internally borne pathogen ?

(A) *Ustilago avenae*

(B) *Ustilago hordei*

(C) *Erisiphe polygoni*

(D) *Synchytrium endobioticum*

15. Pectin degrading enzymes are produced by :

(A) Bacteria

(B) Nematode

(C) Fungi

(D) All of the above

16. Mycoparasitism is associated with :

(A) *Alternaria*

(B) *Pythium*

(C) *Albugo*

(D) *Trichoderma*

17. Smutus attack mostly :

(A) Leaves

(B) Flowers

(C) Roots

(D) Seeds

18. 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

19. Late blight pathogen belongs to :

(A) True fungi

(B) Bacterium

(C) Oomycetes

(D) Virus

20. Most fungi grow best at pH :

(A) 4-6

(B) 9-11

(C) 6·5-7·5

(D) – 10

21. 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*

22. Race concept in rust fungi was given by :

(A) E. C. Stakman

(B) Eriksson

(C) H.M. Ward

(D) Orton

23. High sugar pathogens are generally :

(A) Biotroph

(B) Necrotroph

(C) Symbiotic

(D) Saprophytes

24. 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*

25. Quarantine measures are aimed at :

(A) Increasing yield

(B) Preventing introduction of new pathogens

(C) Increasing soil fertility

(D) Improving irrigation

26. The father of seed pathology is :

(A) S. B. Mathur

(B) V. K Agarwal

(C) Paul Neergard

(D) C. V. Subramanium

27. Physiological specialization in stem rust of wheat demonstrated by :

(A) Anton de Bary

(B) K. C. Mehta

(C) Ericson

(D) B.C. Mundukar

28. Downy mildew disease is caused by :

(A) *Albugo*

(B) *Phytophthora*

(C) *Peronospora*

(D) *Pythium*

29. The most common laboratory weed is :

(A) *Claviceps*

(B) *Alternaria*

(C) *Penicillium*

(D) *Aspergillus*

30. Yeast is an important source of :

(A) Vitamin A

(B) Vitamin B

(C) Vitamin C

(D) Vitamin D

31. Phytoalenins produced by plants in response to fungal infection are :

(A) Protein

(B) Lipid

(C) Glycoprotein

(D) Phenolic compound

32. Root-knot of vegetable is caused by a :

(A) Virus

(B) Bacterium

(C) Fungus

(D) Nematode

33. Damping-off of seedlings of vegetable crops is generally caused by :

(A) *Pythium*

(B) *Peronospora*

(C) *Tilletia*

(D) *Erysiphe*

34. Which of the following is associated with leaf curl disease ?

(A) *Ustilago*

(B) *Taphrina*

(C) *Puccinia*

(D) *Uromyces*

35. 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

36. In Loose smut of wheat the Mearly recurrence is :

(A) Internally seed-borne

(B) Externally seed-borne

(C) Soil-borne

(D) Air-borne

37. Systemic resistance provides protection :

(A) Only at infection site

(B) Only in roots

(C) Throughout the plant

(D) Only in leaves

38. Induced Systemic Resistance (ISR) is mainly triggered by :

(A) Viral infection

(B) Necrotrophic fungi

(C) Rhizobacteria

(D) Insect feeling

39. Sesamum phyllody disease is caused by :

(A) Virus

(B) Fungus

(C) Bacterium

(D) Phytoplasma

40. The main vector of Sesamum phyllody is :

(A) Whitefly

(B) Aphid

(C) Leaf hopper

(D) Thrips

41. The characteristic symptom of Sesamum phyllody is :

(A) Leaf spots

(B) Wilting

(C) Floral parts converted into leafy structures

(D) Stem rot

42. Sesamum phyllody is also known as :

(A) Green ear disease

(B) Little leaf disease

(C) Phyllody disease

(D) Rust disease

43. Brown rot disease is commonly associated with :

(A) Cotton

(B) Potato

(C) Rice

(D) Wheat

44. Tobacco mosaic virus was first discovered by :

(A) Robert Koch

(B) Dimitri Ivanovsky

(C) Louis Pasteur

(D) Alexander Fleming

45. Mosaic viruses are mainly transmitted by :

(A) Fungi

(B) Nematodes

(C) Insects like aphids

(D) Soil

46. Root Knot disease of cabbage is caused by :

(A) Fungus

(B) Bacterium

(C) Virus

(D) Nematode

47. The characteristic symptom of root knot disease is :

(A) Leaf spots

(B) Stem rot

(C) Gall formation on roots

(D) Wilting without root damage

48. Management of root knot in cabbage includes :

(A) Crop rotation

(B) Resistant varieties

(C) Soil solarization

(D) All of the above

49. The term 'biofungicide' refers to :

(A) Synthetic fungicide

(B) Plant extract

(C) Microbial based fungicide

(D) Hormonal spray

50. Biological control of plant diseases involves the use of :

(A) Chemical pesticides

(B) Resistant varieties

(C) Living organisms

(D) Physical methods

51. The first broad spectrum antibiotic discovered is :

(A) Chloramphenicol

(B) PCNB

(C) Penicillin

(D) Streptomycin

52. The causal agent of bacterial leaf blight of rice is :

(A) *Pseudomonas cichorii*

(B) *Clavibacter michiganensis*

(C) *Xanthomons oryzae*

(D) *Strepomycin scabies*

53. Teleutospores are sessile (stalk-less) in the rust fungus :

(A) *Gymnosporangium*

(B) *Puccinia*

(C) *Uromyces*

(D) *Melampsora*

54. Primary source of infection of green ear disease of Bajra is :

(A) Insect

(B) Soil

(C) Seed and soil

(D) Air

55. The reserve food in the phylum Oomycota is :

(A) Glycogen

(B) Starch

(C) Cellulose

(D) Mycolaminarin

56. Treatment of seed to eradicated 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)

57. Virioids spread from cell to cell by :

(A) Plasmodesmata

(B) Mobile protein

(C) Cell division

(D) RNA

58. Concentric ring or target board symptoms on the leaves is caused by :

(A) *Cercospora*

(B) *Alternaria*

(C) *Albugo*

(D) *Phytophtora*

59. 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

60. 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*

61. Late blight pathogen of potato can overwinter in :

(A) Insects

(B) Water

(C) Plant debris of potato

(D) Soil

62. Which of the following organisms can serve as a biofertilizer for rice crop ?

(A) *Rhzobium* sp.

(B) *Gelidium*

(C) *Trichoderma*

(D) *Nostoc*

63. Who is regarded as father of plant disease epidemiology ?

(A) Stakman

(B) De Bary

(C) Erickson

(D) J.E. Vanderplank

64. 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

65. Burgundy mixture was first introduced by :

(A) J. Robertson

(B) I. B. Prevost

(C) P. A. Milardet

(D) E. Masson

66. Agar-agar is produced from :

(A) *Nostoc*

(B) *Gelidium*

(C) Yeast

(D) *Spirullina*

67. Optimum pH range for fungal growth is around :

(A) 4-6

(B) 9-11

(C) 6·5-7·5

(D) 8-10

68. 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

69. Soil borne pathogen can be best managed by :

(A) Fungicide application

(B) Hot water treatment

(C) Biological control

(D) Integrated disease management strategy

70. Resistance genes are usually found in :

(A) Wild plant

(B) Cultivated plant

(C) Native plant

(D) Ornamental plant

71. Exclusion of plant diseases by legislation is known as :

(A) Disease resistance

(B) Eradication

(C) Plant quarantine

(D) Cultural control

72. The causal organism of red rot of sugarcane is :

(A) *Ustilago setamania*

(B) *Corcospora personata*

(C) *Colletotrichum falcatum*

(D) *Fusarium udum*

73. Genetic material of TMV is :

(A) dsDNA

(B) ssDNA

(C) ssRNA

(D) dsRNA

74. The coprophilous fungi inhabit :

(A) Dung

(B) Dead wood

(C) Decaying leaves

(D) Food

75. 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

76. What is the causal organism of stem gall disease in coriander ?

(A) *Alternaria alternata*

(B) *Protomyces macrosporus*

(C) *Fusarium oxysporum*

(D) *Xanthomonas campestris*

77. What is the primary symptoms of stem gall disease in coriander ?

(A) Leaf spot

(B) Yellowing of leaves

(C) Swollen, humor-like galls on stems and leaves

(D) Root rot

78. Which is the first step is a plant disease cycle ?

(A) Inoculation

(B) Infection

(C) Reproduction

(D) Presentation

79. Primary source of infection to green ear disease of Bajra is :

(A) Insect

(B) Soil

(C) Seed and soil

(D) Air

80. Smut fungi usually affect plants belonging to :

(A) Cyperaceae

(B) Poaceae

(C) Both (A) and (B)

(D) None of the above

81. Viroids can be transmitted through :

(A) True seed

(B) Pollen grain

(C) Vegetative parts

(D) All of the above

82. Bacterial leaf blight is also known as :

(A) Kresek disease

(B) Tungro disease

(C) Both of the above

(D) Blast disease

83. Which disease is known as 'Cancer of sugarcane' ?

(A) Sugarcane wilt

(B) Red rot of sugarcane

(C) Whipsmut of sugarcane

(D) Mosaic of sugarcane

84. The secondary infection of black stem rust of wheat occurs through :

(A) Basidiospores

(B) Uredospores

(C) Teleutospore

(D) Pycniospores

85. Karnal smut of rice is caused by :

(A) *Tilletia* sp.

(B) *Puccinia* sp.

(C) *Neovossia* sp.

(D) *Fusarium* sp.

86. Rust of linseed is caused by :

(A) *Protomyces macrosporus*

(B) *Taphrina maculens*

(C) *Melampsora lini*

(D) *Puccinia arachidis*

87. All fungi are :

(A) Symbionts

(B) Parasites

(C) Saprophytes

(D) Heterotrophs

88. Water mold is :

(A) *Synchytrium*

(B) *Saprolegnia*

(C) *Agaricus*

(D) *Ustilago*

89. Haustoria are absent in :

(A) *Cystopus*

(B) *Puccinia*

(C) *Claviceps*

(D) *Synchytrium*

90. In which form reserve food material is stored by fungi ?

(A) Glycogen

(B) Oil bodies

(C) Starch

(D) Alcohol

91. *Albugo candida* is :

(A) Saprophytic fungus

(B) Parasitic fungus

(C) Autotrophic fungus

(D) Epizoic fungus

92. *Albugo* reproduces asexually by means of structures which are better called :

(A) Sporangia

(B) Canidiosporangia

(C) Conidia

(D) Oogonia

93. Which is known as Green mold ?

(A) *Neurospora*

(B) *Mucor*

(C) *Penicillium*

(D) *Saccharomyces*

94. The whip smut of sugarcane is caused by :

(A) *Ustilago scitamineae*

(B) *Ustilago avenae*

(C) *Puccinia striiformis*

(D) *Ultilago graminis*

95. Teleutospores of Puccinia are :

(A) Two-celled

(B) Three-celled

(C) Four-celled

(D) One-celled

96. Heteroecious fungus are :

(A) *Ustilago*

(B) *Puccinia*

(C) *Melampsora*

(D) *Albugo*

97. Geniculate conidiophores are found in :

(A) *Alternaria*

(B) *Cercospora*

(C) *Saprolegnia*

(D) *Aspergillus*

98. Muriform conidia are found in :

(A) *Aspergillus*

(B) *Albugo*

(C) *Alternaria*

(D) *Cercospora*

99. U. P. Agricultural Diseases and Pests Act was enacted in :

(A) 1873

(B) 1914

(C) 1954

(D) 1966

100. Who advanced the 'gene for gene' concept of disease resistance and susceptibility ?

(A) Muller

(B) Blackeslee

(C) Vander Planck

(D) Flor

(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।