

Programme Code : 67

INDIRA GANDHI NATIONAL TRIBAL UNIVERSITY  
AMARKANTAK (M.P.)

ENTRANCE EXAMINATION, APRIL 2017

PG Programme  
BOTANY

Question Booklet Sl. No.

101961

QUESTION BOOKLET

NAME ..... HALL TICKET NO .....

CENTRE ..... INVIGILATOR'S SIGN.....

Time : 2 hours

Max. Marks : 100

INSTRUCTIONS TO THE CANDIDATES

1. Write your NAME and HALL TICKET NUMBER clearly as it appears in the Hall Ticket before attempting the paper. Incorrect or illegible entry of your name / number may cause your paper to be rejected for evaluation.
2. No candidate will be allowed to enter the examination hall 30 minutes after the commencement of the examination.
3. No candidate will be allowed to leave the hall 30 minutes prior to completion of the examination.
4. This Booklet has 16 pages including this page containing 100 questions. All questions have to be answered in OMR sheet only using BLACK/BLUE BALL POINT PEN. No additional Booklet will be issued.
5. The scientific calculators are allowed.
6. Any candidate causing disturbance in the hall or indulging in copying in any form or attempting to help others will be debarred from the Examination.
7. Each question carries 1 mark. **There is no negative marking.**
8. Return this question Booklet to the invigilator after completion of the examination.

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Marks Secured : .....

Name and Signature of the Evaluator : .....

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**All questions have to be answered in OMR sheet only. Each question carries 1 mark.**  
**(100 × 1 = 100)**

1. The current number of global biodiversity hot-spots as per IUCN is
  - A. 25
  - B. 15
  - C. 24
  - D. 34
  
2. A dry indehiscent fruit in which pericarp is fused with seed coat is called
  - A. Berry
  - B. Caryopsis
  - C. Nut
  - D. Capsule
  
3. Changes in the natural habitat due to the activities of humans is termed
  - A. Anthropogenic
  - B. Anthracite
  - C. Antarctic
  - D. Anthropocentric
  
4. Which one of the following is responsible for "Green house effect"?
  - A. Oxides of S and N
  - B. Oxides of Ca and Mg
  - C. CO<sub>2</sub> and CH<sub>4</sub>
  - D. Oxides of Hg and Ni
  
5. A species whose removal would result in a large change in abundance and even destruction of one or more species in a community is termed
  - A. Predator species
  - B. Herbivores
  - C. Keystone species
  - D. Invasive species
  
6. The edible mushroom *Pleurotus* belongs to which fungal division?
  - A. Zygomycota
  - B. Ascomycota
  - C. Basidiomycota
  - D. Oomycota
  
7. The genus *Rhizopus* belongs to the class
  - A. Oomycetes
  - B. Pyrenomycetes
  - C. Hyphomycetes
  - D. Zygomycetes
  
8. Which one of the following is the source of Iodine?
  - A. *Gelidium*
  - B. *Polysiphonia*
  - C. *Fucus*
  - D. *Laminaria*

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9. Development of sporangium in *Ophioglossum* is
- A. Leptosporangiate                      B. Eusporangiate  
C. Both (a) and (b)                      D. None of the above
10. Resin canals are found in
- A. Pinus                                      B. *Gnetum*  
C. *Equisetum*                              D. *Ephedra*
11. Name of the taxa below the rank of specie are
- A. Binomial                                  B. Uninomial  
C. Polynomial                              D. Trinomial
12. Apocary is the characteristic feature of the family
- A. Magnoliaceae                              B. Acanthaceae  
C. Papavaraceae                              D. Asteraceae
13. *Cuscuta reflexa* is a
- A. Hemi-root parasite                      B. Root parasite  
C. Stem parasite                              D. Creeper
14. Racemose inflorescence is the characteristic feature in the genus
- A. Calotropis                                  B. Magnolia  
C. Euphorbia                                  D. *Crotalaria*
15. Which of the following is the most advaced among monocots according to Bentham & Hooker's system of classification?
- A. Orchidaceae                              B. Poaceae  
C. Bignoniaceae                              D. Balanophoraceae
16. Chicory is obtained from \_\_\_\_\_ of *Chicorium intybus*.
- A. Roots                                      B. Petals  
C. Stamens                                      D. Style and stigma
17. *Leucas aspera* belongs to the family
- A. Lamiaceae                                  B. Orchidaceae  
C. Verbenaceae                              D. Aracaceae

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18. Plants which grow at high light intensities are called
- A. Xerophytes
  - B. Sciophytes
  - C. Heliophytes
  - D. None of the above
19. Halophytes are known to exhibit
- A. Exodermis
  - B. Vivipary
  - C. Mesodermis
  - D. Endodermis
20. Histogen theory was proposed by
- A. Schmidt
  - B. Stewart
  - C. Hanstein
  - D. Nageli
21. Which one of the following is not a nitrogen fixing bacterium?
- A. Azotobacter sp.
  - B. Rhizobium sp.
  - C. Pseudomonas sp.
  - D. Azospirillum sp.
22. Which one of the following is used in protoplast fusion?
- A.  $\text{CaCl}_2$
  - B. pH
  - C. PEG
  - D. DMSO
23. DNA fingerprinting technology was invented by
- A. Kary Mullis
  - B. Robertson
  - C. Alec Jeffrey
  - D. Northern
24. Which one of the following amino acid is found enormously in plants during stress?
- A. Proline
  - B. Leucine.
  - C. Phenyl alanine
  - D. Phenyl alanine
25. The metabolic pathway in which the end product is pyruvic acid
- A. Calvin cycle
  - B. Glycolysis
  - C. Krebs's cycle
  - D. Cyclic electron pathway
26. Kranz anatomy is seen in
- A.  $\text{C}_3$ -Plants
  - B.  $\text{C}_4$ -Plants
  - C. CAM-Plants
  - D.  $\text{C}_2$ -Plants

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27. In the CAMP pathway, the G protein stimulates
- A. Phospholipase C                      B. Adenylyl cyclase  
C. The endoplasmic reticulum      D. Calmodulin
28. Pulvinus leaf base is the characteristic feature of the family
- A. Solanaceae                              B. Malvaceae  
C. Fabaceae                                D. Lamiaceae
29. Red light mediated photo morphogenesis utilizes a wavelength of
- A. 600-750 nm                            B. 420-480 nm  
C. 300-350 nm                            D. 820-900 nm
30. Pollinia is found in
- A. Asclepiadaceae                        B. Musaceae  
C. Mimosaceae                            D. Poaceae
31. The small opening present in the integument is
- A. Obturator                                B. Hypostase  
C. Micropyle                                D. Endothecium
32. In Angiosperms, endosperm is a \_\_\_\_\_ i nature.
- A. Haploid                                  B. Hexaploid  
C. Diploid                                  D. Triploid
33. An example of hexaploid plant is
- A. Rice                                        B. Sugarcane  
C. Mango                                    D. Wheat
34. A technique of micropropagation is
- A. Somatic embryogenesis  
B. Multiple root production  
C. Growth of micro organisms on culture medium  
D. Ovary culture and embryo rescue
35. Which one of the following is the earliest land plant?
- A. Rhynia                                    B. Cycas  
C. Ulothrix                                  D. Synchytrium

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36. The presence of cytoplasmic genes was reported for the first time by  
A. Bridges  
B. Correns  
C. Kolreuter  
D. Both (a) and (b)
37. Pattern of colour blindness in humans is an example of  
A. Sex limited trait  
B. Sex influence trait  
C. X-linked trait  
D. Y-linked trait
38. In which stage of meiosis the terminalization occurs  
A. Prophase- II  
B. Metaphase- I  
C. Prophase- I  
D. Anaphase- I
39. Parapatric and Sympatric speciation are mode of  
A. Isolation  
B. Variation  
C. Speciation  
D. Adaptive radiation
40. The phenotypic ratio of a dihybrid cross is  
A. 1:3:1  
B. 1:1:2  
C. 1:2:1  
D. 9:3:3:1
41. Which one of the following was not present on primitive earth?  
A. H<sub>2</sub>O  
B. Ammonia  
C. Methane  
D. Oxygen
42. "Chemical evolution of life" was experimentally proved by  
A. Urey and Miller  
B. Jacob and Monod  
C. Oparin  
D. Fischer and Huxley
43. Which one of the following is not a vestigial organ of humans?  
A. Coccyx  
B. Third molar  
C. Nails  
D. Segmented muscle of abdomen

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44. An example of fungus without mycelium is
- |                  |             |
|------------------|-------------|
| A. Puccinia      | B. Rhizopus |
| C. Saccharomyces | D. Mucor    |
45. Xenobiotics are
- |                        |                      |
|------------------------|----------------------|
| A. Microbial products  | B. Natural compounds |
| C. Synthetic compounds | D. All the above     |
46. A repeat composed of an array of sequences repeated continuously in the same orientation
- |                    |                  |
|--------------------|------------------|
| A. Reverse repeat  | B. Direct repeat |
| C. Indirect repeat | D. Tandom repeat |
47. A decondensed, transcriptionally active interphase chromatin is called
- |                    |                |
|--------------------|----------------|
| A. Heterochromatin | B. Euchromatin |
| C. Nucleosome      | D. Vimentin    |
48. The first bacterial genome to be sequenced was that of
- |                             |                         |
|-----------------------------|-------------------------|
| A. Haemophilus influenzae   | B. Escherichia coli     |
| C. Streptococcus pneumoniae | D. Borrelia burgdorferi |
49. Which one of the following is used as a biocontrol agent?
- |                          |                            |
|--------------------------|----------------------------|
| A. Bacillus subtilis     | B. Pseudomonas fluorescens |
| C. Trichoderma harzianum | D. All of the above        |
50. The term 'totipotency' was first coined by
- |               |                 |
|---------------|-----------------|
| A. Carlson    | B. Klercker     |
| C. Haberlandt | D. E.C. Cocking |
51. Which one of following is the repeating unit of proteins?
- |                        |                    |
|------------------------|--------------------|
| A. Phosphate molecules | B. Nucleotides     |
| C. Aminoacids          | D. Sugar molecules |



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52. The technique employed to detect DNA is  
A. Southern Blot                                      B. Western Blot  
C. Northern Blot                                      D. Dot Blot
53. CRY proteins are obtained from  
A. *Bacillus thuringiensis*                                      B. *Agrobacterium tumefaciens*  
C. Both(a) and (b)                                      D. None of the above
54. When perianth is absent, the flower is said to be  
A. Apetalous    B. Achlamydeous  
C. Atepalous    D. Dichlamydeous
55. *Oryza sativa* represents one of the following categories  
A. Cereals    B. Ornamental  
C. Pulses    D. Vegetables
56. The defense substances with antimicrobial properties produced by plants after pathogen attack are called as  
A. Phytohormones                                      B. Phytochemicals  
C. Phytotoxins                                      D. Phytoalexins
57. The ovule with horseshoe shaped embryo ac is known as  
A. Camphyotropous                                      B. Amphitropous  
C. Anatropous    D. Orthotropous
58. The "crater" like spots formed on the hos tissues due to bacteria are known as  
A. Blotches    B. Wilts  
C. Cankers    D. Hypertrophies
59. National park is an example for \_\_\_\_\_ tpe of conservation.  
A. Germplasm    B. Artificial  
C. *Ex situ*    D. *In situ*

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60. Viroids have
- A. DS-DNA enclosed by protein coat
  - B. SS-DNA not enclosed by protein coat
  - C. SS-RNA not enclosed by protein coat
  - D. DS-RNA enclosed by protein coat
61. The term "Apomixis" was first introduced by
- A. G.H. Shull
  - B. T.H. Morgan
  - C. W. Bateson
  - D. H. Winkler
62. Gynandry in plants refers to
- A. Anthers and stigma mature at the same time
  - B. Stigma matures earlier than the anther of the same flower
  - C. Anthers matures earlier than the stigma of the same flower
  - D. Anthers of the flower pollinate the stigma of the same flower
63. Which one of the following is a Decomposer?
- A. Mosses
  - B. Bacteria
  - C. Ferns
  - D. Algae
64. Seed dispersal by animals is known as
- A. Hydrochory
  - B. Zoochory
  - C. Anemochory
  - D. Phytochory
65. Which of the following is not a part of xyle tissue?
- A. Companion cells
  - B. Tracheids
  - C. Tracheae
  - D. Wood fibres
66. Which one of the following biome has mainly broad leaved trees?
- A. Tundra
  - B. Desert
  - C. Taiga
  - D. Evergreen Forest
67. The unit of Biomass is
- A. Joule
  - B. Lux
  - C. Kilogram
  - D. Pascal

68. In grassland ecosystem, the pyramid of energy is
- |                   |                     |
|-------------------|---------------------|
| A. Upright        | B. Inverted         |
| C. Both (A) & (B) | D. All of the above |
69. Potato is a native of
- |          |                  |
|----------|------------------|
| A. India | B. South America |
| C. China | D. Russia        |
70. Flow of nutrients in an ecosystem is
- |                   |                   |
|-------------------|-------------------|
| A. Bidirectional  | B. Cyclic         |
| C. Unidirectional | D. Both (B) & (C) |
71. Annual rings are found in
- |                    |                  |
|--------------------|------------------|
| A. Metaxylem       | B. Primary xylem |
| C. Secondary xylem | D. All of these  |
72. Callose plugs are characteristically found in
- |                    |                 |
|--------------------|-----------------|
| A. Companion cells | B. Trachea      |
| C. Stone cells     | D. Sieve plates |
73. The superiority of hybrids over parent is known as
- |              |                 |
|--------------|-----------------|
| A. Mutation  | B. Out breeding |
| C. Selection | D. Heterosis    |
74. The initiator codon is
- |        |        |
|--------|--------|
| A. UUU | B. AUG |
| C. UGA | D. GUG |
75. The amphibians of the plant kingdom re
- |               |                  |
|---------------|------------------|
| A. Algae      | B. Pteridophytes |
| C. Bryophytes | D. Gymnosperms   |

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76. A nucleoside is
- A. uric acid/pyrimidine + phosphate      B. Pyrimidine + purine + phosphate  
C. purine/pyrimidine + sugar      D. Purine + sugar + phosphate
77. Feathered stigma is present in
- A. Pea      B. Hibiscus  
C. Poppy      D. Wheat
78. In angiosperms, development of micro-gametophyte from each microspore mother cell undergoes
- A. Mitosis to produce 4 microspores  
B. Two successive mitosis to form 4 microspores  
C. Two successive meiotic division to form 4 microspores  
D. Meiosis to produce 4 haploid microspores
79. Water exudation through hydathodes is known as
- A. Transpiration      B. Guttation  
C. Evaporation      D. Bleeding
80. Basal placentation is present in family
- A. Malvaceae      B. Solanaceae  
C. steraceae      D. Fabaceae
81. Insectivorous plants grow in
- A. Nitrogen deficient soil      B. Nitrogen rich soil  
C. Potassium deficient soil      D. Carbohydrate rich soil
82. In pond ecosystems benthos represents
- A. Zooplanktons on water surface  
B. Primary consumers in the bottom of a pond  
C. Large fishes eating small ones  
D. All phytoplankton's

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83. Eyes on potato tubers represent
- A. Rootlets
  - B. Scars
  - C. Nodes with buds
  - D. Sutures
84. A fungus without mycelium is
- A. *Puccinia*
  - B. *Rhizopus*
  - C. *Mucor*
  - D. *Saccharomyces*
85. The organelles involved in photorespiration are
- A. Glyoxysomes, chloroplast and mitochondria
  - B. Chloroplast, peroxisome and glyoxysome
  - C. Mitochondria, peroxisome and glyoxysomes
  - D. Chloroplast, mitochondria and peroxisome
86.  $\Phi$ X 174 has
- A. Single stranded RNA
  - B. Single stranded DNA
  - C. Double stranded RNA
  - D. Double stranded DNA
87. Floridean starch is found in
- A. Chlorophyceae
  - B. Myxophyceae
  - C. Rhodophyceae
  - D. Phaeophyceae
88. The hormone reducing transpiration rate by inducing stomatal closure is
- A. Ethylene
  - B. ABA
  - C. Cytokinin
  - D. Auxin
89. In bryophytes the female sex organ is called
- A. Antheridium
  - B. Archegonium
  - C. Carpogonium
  - D. Ascogonium

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90. Which of the following pigment is involved in photo-morphogenetic movements?
- A. Cytochrome  
B. Chromatin  
C. Phytochrome  
D. Vernalin
91. First CO<sub>2</sub> receptor in C<sub>4</sub> plants is
- A. PGA  
B. RuBD  
C. PEP  
D. OAA
92. The components of an ecosystem are
- A. Biotic and abiotic  
B. Plants and animals  
C. Man and plants  
D. Trees and weeds
93. The two great industrial tragedies MIC and Chemobyl occurred respectively in
- A. Ukraine 1990, Bhopal 1986  
B. Madhya Pradesh 1980, Russia 1990  
C. Bhopal 1980, Ukraine 1984  
D. Bhopal 1984, Ukraine 1986
94. Tyloses are
- A. Tracheal plugs plugging the lumen of vessels and tracheids  
B. Secretory cells  
C. Sieve plates  
D. Lactiferous channels
95. The 10% energy transfer law of food chain was given by
- A. Lederberg  
B. Lindley  
C. Weismann  
D. Lindmann
96. Reaction centre of photo system-I in green plants is
- A. P<sub>680</sub>  
B. P<sub>700</sub>  
C. P<sub>690</sub>  
D. P<sub>780</sub>
97. Number of cotyledons in *Zea mays*, *Cycas* and *Pinus* respectively are
- A. 1, 2, 4  
B. 2, 1, 4  
C. 2, 2, many  
D. 1, 2, many

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98. Double fertilization is found in
- |                |                  |
|----------------|------------------|
| A. Angiosperms | B. Bryophytes    |
| C. Gymnosperms | D. Pteridophytes |
99. Sporangium derived from a single cell is called
- |                      |                      |
|----------------------|----------------------|
| A. Eusporangiate     | B. Leptosporangiate  |
| C. Heterosporangiate | D. none of the above |
100. The term water potential was proposed by
- |                    |                       |
|--------------------|-----------------------|
| A. Godlewski       | B. J. C. Bose         |
| C. Dixon and Jolly | D. Slatyer and Taylor |
-