ENTRANCE EXAMINATION FOR ADMISSION, MAY 2011.
Ph.D. (BOTANY)
COURSE CODE : 136

Register Number : 

Signature of the Invigilator
(with date)

COURSE CODE : 136
Time : 2 Hours Max : 400 Marks

Instructions to Candidates :

1. Write your Register Number within the box provided on the top of this page and fill in the page 1 of the answer sheet using pen.

2. Do not write your name anywhere in this booklet or answer sheet. Violation of this entails disqualification.

3. Read each question carefully and shade the relevant answer (A) or (B) or (C) or (D) in the relevant box of the ANSWER SHEET using HB pencil.

4. Avoid blind guessing. A wrong answer will fetch you -1 mark and the correct answer will fetch 4 marks.

5. Do not write anything in the question paper. Use the white sheets attached at the end for rough works.

6. Do not open the question paper until the start signal is given.

7. Do not attempt to answer after stop signal is given. Any such attempt will disqualify your candidature.

8. On stop signal, keep the question paper and the answer sheet on your table and wait for the invigilator to collect them.

9. Use of Calculators, Tables, etc. are prohibited.
1. What Robert Hooke had discovered in the thin section of cork as a “cell” was really
   (A) Cellulose  (B) Nucleus
   (C) Protoplasm  (D) Cell walls

2. Tonoplast is a differentially permeable membrane surrounding the
   (A) Mitochondria  (B) Cytoplasm
   (C) Vacuole  (D) Nucleus

3. When a ripe tomato is pricked with a needle, a watery fluid comes out. This fluid is stored in
   (A) Cytoplasm  (B) Plastid
   (C) Nucleus  (D) Vacuole

4. A nucleoside is
   (A) Base + Sugar  (B) Base + Phosphate
   (C) Sugar + Phosphate  (D) Base + Sugar + Phosphate

5. In DNA, when AGCT occur, their association is part as per the following pairs
   (A) AG – CT  (B) AC – GT
   (C) AT – CG  (D) All are possible

6. A heteropolysaccharide is
   (A) Starch  (B) Cellulose
   (C) Glycogen  (D) Chitin

7. Electron microscope was invented by
   (A) Knoll & Ruska  (B) Schleiden & Schwann
   (C) Zsigmond  (D) Flemming & Brown

8. Fuelgen reaction is employed for the detection of
   (A) DNA alone  (B) RNA alone
   (C) DNA & RNA  (D) Proteins

9. Microsomes are formed from
   (A) Endoplasmic reticulum  (B) Ribosomes
   (C) Golgi complex  (D) Mitochondria

136  2
10. The non-protein part of enzyme is called
   (A) Holoenzyme          (B) Prosthetic group
   (C) Apoenzyme           (D) None of the above

11. The enzyme bromelain is obtained from
    (A) Papaya              (B) Pineapple
    (C) Saliva              (D) Witches broom

12. Which among the following has highest turnover number?
    (A) Urease              (B) Carbonic anhydrase
    (C) Catalase            (D) Pepsin

13. Which one of the following is a prokaryote?
    (A) Chlamydomonas       (B) Anabaena
    (C) Rhizopus            (D) Agaricus

14. Yellow and orange colour of petals is due to
    (A) Chloroplasts        (B) Anthocyanins
    (C) Chromoplasts        (D) Leucoplasts

15. Raphides are found in
    (A) Citrus              (B) Nerium
    (C) Mango               (D) Colocasia

16. Triticale a cereal was formed by hybridization between
    (A) Wheat & Barley      (B) Rice & Rye
    (C) Wheat & Rye         (D) Wheat & Maize

17. If the haploid number of chromosome is 12. What shall be the number of chromosomes in monosomic?
    (A) 22                   (B) 23
    (C) 25                   (D) 26

18. The alkaloid from colchicum autumnae of family Liliaceae induces
    (A) Sterility            (B) Dormancy
    (C) Cell division        (D) Polyploidy

19. In which stage DNA duplication occurs?
    (A) G₁                   (B) G₂
    (C) S                    (D) All of these
20. Best material for the study of mitosis in laboratory is
   (A) anther       (B) root tip
   (C) leaf tip    (D) ovary

21. Mitotic spindle is mainly composed by which protein?
   (A) actin       (B) myosin
   (C) actomycin  (D) myoglobin

22. The lac operon concept in gene regulation was proposed by
   (A) Jacob & Monod  (B) Watson & Crick
   (C) H.G. Khorana  (D) Kornberg

23. Binomial system of nomenclature was first suggested by
   (A) Darwin       (B) Hutchinson
   (C) Malthus      (D) Linnaeus

24. Bunchy top of Banana is caused by
   (A) Mycoplasma  (B) Deuteromycetes
   (C) Xanthomonas (D) Viruses

25. Nodules with Nitrogen fixing bacteria are present in
   (A) Mustard     (B) Wheat
   (C) Gram        (D) Cotton

26. The cell wall of bacteria is composed of
   (A) Murein      (B) Chitin
   (C) Cellulose   (D) Suberin

27. The branches of Botany which deals with fungi is
   (A) Phycology   (B) Mycology
   (C) Microbiology (D) Embryology

28. Heterothallism was discovered by
   (A) Alexopolous (B) K.C. Mehta
   (C) Louis Pasteur (D) Blakeslee
29. Which one of the following is commonly called ‘blue mold’?
   (A) Penicillium  (B) Peziza
   (C) Aspergillus  (D) Erysiphe

30. Reindeer moss is a
   (A) Pteridophyte  (B) Bryophyte
   (C) Lichen  (D) Gymnosperm

31. Parasite alga is
   (A) Chara  (B) Oedogonium
   (C) Anabaena  (D) Cephaleuros

32. Carragenin is produced by
   (A) Red algae  (B) Brown algae
   (C) Green algae  (D) Blue green algae

33. Water bloom is generally caused by
   (A) Hydrilla  (B) Bacteria
   (C) Bluegreen algae  (D) Green algae

34. Palmella stage is observed in
   (A) Ulothrix  (B) Spirogyra
   (C) Chlamydomonas  (D) Chara

35. Chantransia stage is seen in
   (A) Polysiphonia  (B) Batrochospermum
   (C) Gelidium  (D) Gracillaria

36. Synzoospore is formed in
   (A) Vaucheria  (B) Spirogyra
   (C) Oedogonium  (D) Ulva

37. Elaters help in dispersal of spores of
   (A) Riccia  (B) Marchantia
   (C) Dryopteris  (D) Funaria
38. Protonema is seen in
   (A) Funaria   (B) Riccia
   (C) Anthoceros   (D) Marchantia

39. Peat moss is
   (A) Anthoceros   (B) Funaria
   (C) Sphagnum   (D) Riccia

40. Development of sporophyte directly from gametophyte tissue is called
   (A) Apogamy   (B) Apospory
   (C) Syngamy   (D) Parthenogenesis

41. Which one of the following is not formed in Selaginella?
   (A) Heterophyll   (B) Heterospor
   (C) Ligulate leaf   (D) Homospor

42. One of the following is a bio-fertilizer.
   (A) Azolla   (B) Selaginella
   (C) Salvinia   (D) Marselia

43. Fern prothallus is normally
   (A) Diploid   (B) Haploid   (C) Triploid   (D) Tetraploid

44. One of the following is a fossil.
   (A) Salvinia   (B) Adiantum
   (C) Rhynia   (D) Azolla

45. Sporocarp is seen in
   (A) Salvinia   (B) Isoetes
   (C) Marattia   (D) Lycopodium

46. Which one of the following is called ‘maiden’s hair fern’?
   (A) Pteris   (B) Pteridium
   (C) Ophioglossum   (D) Adiantum

47. Which one of the following is known as tallest Gymnosperm?
   (A) Ginkgo   (B) Sequoia   (C) Pinus   (D) Cycas

136  6
48. The stem of female cycas plant is
   (A) Monopodium   (B) Sympodium
   (C) Rhizomatous   (D) Dichotomous

49. Which one of these is known as living fossil?
   (A) Pinus   (B) Ginkgo
   (C) Ephedra  (D) Gnetum

50. Vessels are found in
   (A) Pinus   (B) Cycas
   (C) Araucaria (D) Gnetum

51. The endosperm in Gymnosperm is
   (A) Haploid   (B) Diploid
   (C) Triploid   (D) Polyploid

52. Winged pollen grains are found in
   (A) Pteris   (B) Cycas
   (C) Pinus    (D) Selaginella

53. Birbal Sahni discovered a fossil plant from Raj Mahal hills. It belongs to
   (A) Angiosperm   (B) Gymnosperm
   (C) Bryophyta    (D) Pteridophyta

54. The plant which bears clinging root is
   (A) Trapa   (B) Screwpine
   (C) Podostemon   (D) Orchid

55. Eyes on potato tubers represent
   (A) internodes   (B) scars
   (C) root base    (D) nodes with buds

56. Penetrating roots in cuscuta are
   (A) Haustoria   (B) Epiphytes
   (C) Stilt roots   (D) Clinging roots
57. Companion cells are composition of
   (A) Xylem                    (B) Phloem
   (C) Parenchyma               (D) Tracheids

58. Tyloses are seen in
   (A) Phloem cells            (B) Collenchyma
   (C) Xylem cells             (D) Aerenchyma

59. Duramen is
   (A) Periderm                (B) Bark
   (C) Sapwood                (D) Heartwood

60. The most primitive type of stele is
   (A) Eustele                (B) Solenostele
   (C) Protostele             (D) Siphonostele

61. The grittiness in apple and pear is due to
   (A) Carotenoids            (B) Lignin
   (C) Areolar tissues        (D) Sclerenchyma

62. Syconus fruit develops from
   (A) Coenanthium            (B) Verticillaster
   (C) Hypanthodium           (D) Cyathium

63. Potatoes are cultivated by
   (A) seeds                  (B) cutting roots
   (C) foliar buds            (D) buds on tubers

64. Parietal placentation is seen in
   (A) Fabaceae               (B) Cucurbitaceae
   (C) Tiliaceae              (D) Rhamnaceae

65. Geocarpic fruit is seen in
   (A) Potato                 (B) Peanut
   (C) Onion                  (D) Garlic
66. Monadelphous condition of stamen is found in
   (A) Malvaceae          (B) Cyperaceae
   (C) Brassicaceae       (D) Solanaceae

67. The edible part of coconut is
   (A) Epicarp             (B) Mesocarp
   (C) Endocarp            (D) Endosperm

68. Which one of the following is a monocarpic plant?
   (A) Bambusa            (B) Sesamum
   (C) Lavandula          (D) Pinus

69. Double fertilization is discovered by
   (A) Brown              (B) Koch
   (C) Stasburger         (D) Nawaschin

70. Four sepals K 4 or (2 + 2) is the characteristic feature of
   (A) Solanaceae         (B) Fabaceae
   (C) Malvaceae          (D) Brassicaceae

71. Syngenesious stamen is seen in
   (A) Asteraceae         (B) Anonaceae
   (C) Apocyanaceae       (D) Asclepiadaceae

72. Cyathium inflorescence is seen in
   (A) Convolvulaceae     (B) Solanaceae
   (C) Euphorbiaceae      (D) Amaranthaceae

73. Gynostegium is seen in
   (A) Aristolochiaceae   (B) Asclepiadaceae
   (C) Orchidaceae        (D) All of these

74. Cleistogamy is seen in
   (A) Commelinaceae      (B) Bromeliaceae
   (C) Typhaceae          (D) Pandanaceae
75. Verticillaster inflorescence is produced by
   (A) Lamiaceae  (B) Fabaceae
   (C) Solanaceae (D) Cucurbitaceae

76. Oblique ovary is found in
   (A) Liliaceae  (B) Solanaceae
   (C) Lamiaceae (D) Asteraceae

77. Cocaine is obtained from
   (A) Atropa  (B) Streptomyces
   (C) Erythroxylon (D) Chrysanthemum

78. Which plant will lose its economic value if its fruits are produced by induced parthenocarpy?
   (A) Banana  (B) Orange
   (C) Grape  (D) Pomegranate

79. Coir of commerce is obtained from which part of the coconut?
   (A) Epicarp  (B) Mesocarp
   (C) Endocarp  (D) Seed coat

80. Guttation occurs through
   (A) Stomata  (B) Hydathodes
   (C) Root hairs  (D) Flower buds

81. Premature leaf fall is due to deficiency of
   (A) Phosphorous  (B) Nitrogen  (C) Iron  (D) Calcium

82. Which of the following organelle is related with photorespiration?
   (A) Peroxisome  (B) Chloroplast
   (C) Mitochondria  (D) Lysosome

83. Who first demonstrated that light absorbed by chloroplast releases oxygen?
   (A) Hill  (B) Blackman
   (C) Engleman  (D) Arnon
84. How many ATP molecules are produced by aerobic oxidation of one molecule of glucose?
   (A) 2       (B) 4       (C) 38       (D) 34

85. R.Q. of sprouting potato tubers will be
   (A) 1       (B) < 1       (C) > 1       (D) 0

86. The 2, 4-D is an effective
   (A) Fungicide   (B) Rodenticide
   (C) Weedicide   (D) Wormicide

87. Movement in leaves of mimosa pudica is
   (A) Phototactic  (B) Seismonastic
   (C) Nyctinastic (D) Epinastic

88. Which of the following is a gaseous plant growth hormone?
   (A) Auxin       (B) Cytokinin
   (C) Ethylene    (D) Gibberellin

89. Germplasm theory was proposed by
   (A) Lamarck     (B) Weisman
   (C) Darwin      (D) Hugo de Vries

90. Savannahs are
   (A) Tropical rain forests   (B) Grassland with scattered trees
   (C) Deserts                (D) Halophytes

91. The minamata disease is caused by
   (A) Mercury           (B) Nitrites
   (C) CFC              (D) DDT

92. The scientist who first carried out experiments on hybrid vigour in maize was
   (A) Mendel          (B) Skull
   (C) Johansen        (D) Kolreuter

93. Potato is native to
   (A) South America   (B) North America
   (C) South East Asia (D) Australia
94. Pyrethrin is obtained from
   (A) Carthamus          (B) Chrysanthemum
   (C) Azadirachta       (D) Amaranthus

95. Bordeaux mixture is used as a
   (A) fertilizer         (B) fungicide
   (C) rodenticide        (D) soil testing chemical

96. Most of the petro crops belong to the family
   (A) leguminosae        (B) euphorbiaceae
   (C) rutaceae           (D) malvaceae

97. First hormone produced by culturing bacteria is
   (A) insulin            (B) throxin
   (C) testosterone        (D) aderenaline

98. 'Molecular scissors' used in genetic engineering is
   (A) DNA polymerase      (B) DNA ligase
   (C) Restriction endonuclease (D) Helicase

99. PCR technique was invented by
   (A) Kary Mullis        (B) E.M. Southern
   (C) Sanger Etal        (D) Arber

100. Rennin used in cheese industry is
     (A) antibiotic         (B) alkaloid
     (C) enzyme             (D) inhibitor