TEST BOOKLET SERIES

TEST BOOKLET
PGT(BIOLOGY)-2016

Time Allowed : 2 Hours

All questions carry equal marks.

INSTRUCTIONS

1. Immediately after the commencement of the examination, you should check that test booklet does not have any unprinted or torn or missing pages or items, etc. If so, get it replaced by a complete test booklet.

2. **Encode clearly the test booklet series A, B, C or D as the case may be in the appropriate place in the answer-sheet.**

3. Write your Roll Number only in the box provided alongside.

4. Do not write anything else on the Test Booklet.

5. This Test Booklet contains **100** items (questions). Each item comprises four responses (answers). Choose only one response for each item which you consider the best.

6. After the candidate has read each item in the Test Booklet and decided which of the given responses is correct or the best, he has to mark the circle containing the letter of the selected response by blackening it completely with Black or Blue ball pen. In the following example, response “C” is so marked:

   ![Encoding Example]

   A  B  C  D

   Do the encoding carefully as given in the illustrations. While encoding your particulars or marking the answers on answer sheet, you should blacken the circle corresponding to the choice in full and no part of the circle should be left unfilled. After the response has been marked in the ANSWER SHEET, no erasing/fluid is allowed.

7. You have to mark all your responses **ONLY on the ANSWER SHEET separately given according to ‘INSTRUCTIONS FOR CANDIDATES’ already supplied to you. Responses marked on the Test Booklet or in any paper other than the answer sheet shall not be examined.**

8. All items carry equal marks. Attempt all items. Your total marks will depend only on the number of correct responses marked by you in the Answer Sheet. There will be no negative marking.

9. Before you proceed to mark responses in the Answer Sheet fill in the particulars in the front portion of the Answer Sheet as per the instructions sent to you.

10. If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct.

11. After you have completed the test, hand over the Answer Sheet only, to the Invigilator.
1. Cholesterol is *not* the precursor in the synthesis of:
   (A) Steroid hormones  (B) Bile acids
   (C) Vitamin D        (D) Adrenalin

2. Ammonia is the main nitrogenous excretory material in:
   (A) Amphibians       (B) Turtles
   (C) Tadpoles         (D) Reptiles

3. The retrieval of data from bioinformatics source is called as:
   (A) Surfing          (B) Data collection
   (C) Data mining      (D) Google searching

4. Ribozymes function as:
   (A) Genetic material (B) RNA
   (C) Enzyme           (D) Both (B) and (C)

5. Which of the enzyme is *not* associated with genetic engineering?
   (A) Exonuclease      (B) Endonuclease
   (C) Ligase           (D) Lyase
6. Removal of the keystone predator from a community will result in:
   (A) Dominance of an alternate predator
   (B) General decline in species diversity
   (C) Increases in prey population densities
   (D) Decrease in primary productivity

7. Which is the first Immunoglobulin produced in primary response to an antigen?
   (A) IgG          (B) IgE
   (C) IgA          (D) IgM

8. Which wildlife reserve in India is popularly known as Floating National Park?
   (A) Keibul Lamjao (B) Keoladeo
   (C) Chilka Lake   (D) Nal Sarovar

9. Which hormone is used for early pregnancy diagnosis?
   (A) LH           (B) Oxytocin
   (C) Progesterone (D) hCG

10. Which one of the following pairs is *not* correctly matched? Wildlife Sanctuary and State:
    (A) Etturnagarma — Tamil Nadu
    (B) Bhagavan Mahavir — Goa
    (C) Nandini — Jammu and Kashmir
    (D) Narayan Sarovar — Gujarat
11. To hydrolyse ATP during muscle contraction ATPase is present in:

(A) Head of myosin
(B) Neck of myosin
(C) Tail of myosin
(D) Active site of Actin filament

12. Zona pellucida is a non-cellular layer between:

(A) Oolemma and corona
(B) Granulosa and theca
(C) Ooplasm and Nucleosol
(D) Theca and germinal layer

13. Ozonosphere is a component of:

(A) Troposphere
(B) Stratosphere
(C) Mesosphere
(D) Thermosphere

14. Which hormone is not secreted by ovary?

(A) Estrogen
(B) Relaxin
(C) Progesterone
(D) FSH

15. Zygote is:

(A) Totipotent
(B) Pluripotent
(C) Multipotent
(D) Unipotent
16. Which vitamin has maximum antioxidant properties?

(A) Vitamin A                      (B) Vitamin B

(C) Vitamin C                      (D) Vitamin D

17. Which type of cleavage occurs in poultry egg?

(A) Holoblastic                    (B) Meroblastic

(C) Discoidal                      (D) Unequal holoblastic

18. Which is the smallest bone in mammals?

(A) Patella                         (B) Carpals

(C) Incus                          (D) Stapes

19. The colour differentiation is due to:

(A) Rods                           (B) Cones

(C) Bipolar nerves                 (D) Pigmented epithelium

20. Which type of pollution causes jaundice?

(A) Air                            (B) Water

(C) Soil                           (D) Thermal

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21. Which of the following plants yields the reserpine used in the treatment of hypertension?
(A) Ranunculus  (B) Rauvolfia
(C) Cinchona  (D) Atropa

22. A gummy resinous substance used as spice is obtained from root of which of the following plant?
(A) Coriandrum  (B) Carum
(C) Copticum  (D) Ferula

23. The phenomenon of double fertilization was first described by:
(A) Nawaschin  (B) Strasburger
(C) Nageli  (D) Schwann

24. Unisexual flowers and bicollateral bundles are found in the family:
(A) Cruciferae  (B) Commelinaceae
(C) Cucurbitaceae  (D) Combretaceae

25. In which of the following angiosperms are vessels absent?
(A) Digitalis  (B) Desmodium
(C) Drimys  (D) Dodonea
26. A piece of DNA molecule that can serve as a carrier for the genes to be cloned is called:

(A) Virus  (B) Vector
(C) Viroid  (D) Mycoplasma

27. The capability of a isolated single cell to develop into a complete plant is known as:

(A) Apomixis  (B) Totipotency
(C) Parthenogenesis  (D) Somatic hybridization

28. Who is regarded as father of Plant Tissue Culture?

(A) Haberlandt  (B) White
(C) Linnaeus  (D) Skoog

29. Which of the following ecological pyramids is always upright?

(A) Pyramid of energy  (B) Pyramid of biomass
(C) Pyramid of number  (D) None of these

30. Which of the following algae shows parasitism?

(A) Padina  (B) Fucus
(C) Cephaluros  (D) Batrachospermum
31. Tikka disease of groundnut is caused by:

(A) Cercospora  (B) Phytophthora
(C) Albugo  (D) Fusarium

32. Wilt of pigeon pea is caused by:

(A) Helminthosporium  (B) Pythium
(C) Alternaria  (D) Fusarium

33. Who authored the book *Die Naturlichen Pflanzen*?

(A) Thorne  (B) Cronquist
(C) Engler & Prantle  (D) Takhtajan

34. ......................... is a specimen duplicate of the holotype from the same collection of the same date and same locality.

(A) Isotype  (B) Paratype
(C) Lectotype  (D) Neotype
35. According to ICBN the starting date for a valid name of an angiosperm is:

(A) 1st May, 1753  (B) 21st June, 1853
(C) 31st June, 1853  (D) 21st May, 1857

36. In the mesophyll cells of C4 plants, which one of the following substance is absent:

(A) Rubisco  (B) Phosphoenolpyruvate
(C) PEP carboxylase  (D) PGA

37. Which of the following growth regulators is known to promote senescence in plants?

(A) Auxin  (B) Gibberellic acid
(C) Ethylene  (D) Kinetin

38. Which of the following compounds is regenerated in Calvin cycle?

(A) Phosphoglyceric acid  (B) RuBP
(C) Erythrose phosphate  (D) Glucose
39. Ovules are not protected by ovary wall in:

(A) Rose  (B) Cycas
(C) Petunia  (D) Eucalyptus

40. In which of the following leaf performs function of reproduction in addition to normal photosynthesis?

(A) Bryum  (B) Pteris
(C) Cycas  (D) Cuscuta

41. Which of the following structure is not found in a eukaryotic cell?

(A) Ribosome  (B) Mitochondria
(C) Mesosome  (D) Golgi body

42. Ubisch bodies responsible for exine formation are produced in:

(A) Endothecium  (B) Endothelium
(C) Tapetum  (D) Middle layer
The process of evolution of different species in a given geographical area starting from a point and literally radiating to the other areas of geography is known as:

(A) Migration  (B) Adaptive radiation
(C) Divergent evolution  (D) Natural selection

44. The gradual and fairly predictable change in the species composition of a given area is called:

(A) Ecotone  (B) Ecological succession
(C) Ecosystem  (D) Gross productivity

45. Increase in concentration of a harmful substance at successive trophic levels is known as:

(A) Biomagnification  (B) Eutrophication
(C) Pollution  (D) Biodegradation

46. During which phase of mitosis cell is metabolically active and continuously grows but does not replicate its DNA:

(A) $G_1$  (B) $S$
(C) $G_2$  (D) $M$
47. When water enters a cell wall it results in the development of a pressure against wall is known as:

(A) Diffusion Pressure  (B) Wall Pressure
(C) Turgor Pressure  (D) Osmotic Pressure

48. In plants, K$^+$ ions are essential for:

(A) Maintenance of turgidity of cell
(B) Synthesis of chlorophyll
(C) Synthesis of IAA
(D) Nitrogen fixation

49. Cell wall is in the form of two thin overlapping shells which fit together as soapbox, in:

(A) Chrysophyta  (B) Dinoflagellates
(C) Euglenoids  (D) Slime moulds

50. An anticancerous drug, Taxol is obtained from:

(A) Taxodium  (B) Taxus
(C) Todea  (D) Trachyspermum
Sexual spores are produced exogenously in:

(A) Agaricus          (B) Aspergillus

(C) Albugo            (D) Saccharomyces

52. Chlorophyll a, d and phycoerythrin are present in the members of:

(A) Chlorophyaceae     (B) Phaeophyaceae

(C) Rhodophyaceae      (D) Cyanophyaceae

53. Food is stored in the form of mannitol and laminarin in:

(A) Phaeophyaceae      (B) Rhodophyaceae

(C) Chlorophyaceae     (D) Cyanophyaceae

54. Two unequal flagella are present in zoospores in:

(A) Chlorophyaceae     (B) Phaeophyaceae

(C) Rhodophyaceae      (D) Cyanophyaceae

55. Sporophyte is physically and physiologically dependent on gametophyte in:

(A) Fucus              (B) Asterella

(C) Selaginella        (D) Cycas
56. Jacketed sex organs are found in:

(A) Spirogyra  
(B) Polysiphonia  
(C) Marchantia  
(D) Agaricus

57. During translation, peptidyl transferase enzyme is involved in:

(A) Transfer of phosphate group  
(B) Amino acid activation  
(C) Peptide bond formation between adjacent amino acids  
(D) Binding of ribosome subunits to mRNA

58. In eukaryotes, translation is initiated by binding of ribosome to:

(A) Pribnows box  
(B) Hogness box  
(C) 5' cap  
(D) Poly A tail

59. The X-ray diffraction studies conducted by ....................... were key to the discovery of the structure of DNA.

(A) McClintock  
(B) Franklin  
(C) Messelson & Stahl  
(D) Chargaff

60. Largest male gamete are found in which of the following:

(A) Sequoia  
(B) Cycas  
(C) Eucalyptus  
(D) Taxus
61. Which lake is situated on the chanshal peak in Rohru Tehsil of Shimla District?

(A) Chandratal  (B) Tanu Jubbal
(C) Chandranahan  (D) Surajtal

62. What is the approximate altitude of Rohtang pass which is gateway to Lahaul and Spiti?

(A) 11000 ft.  (B) 13050 ft.
(C) 14665 ft.  (D) 14875 ft.

63. Which shrine near Mandi town of H.P. is dedicated to the Nagas?

(A) Kamrunag  (B) Mahunag
(C) Kelangnag  (D) Nagchala

64. Who is the author of *Antiquities of Chamba State, Part I*?

(A) G.T. Vigne  (B) J. Ph. Vogel
(C) H.T. Princep  (D) A.F.D. Harcourt
65. Which year did Mughal emperor Jahangir capture the Kangra fort?

(A) 1604 A.D.  (B) 1609 A.D.

(C) 1616 A.D.  (D) 1622 A.D.

66. In which District of H.P. are the Hul copper mines?

(A) Mandi  (B) Sirmaur

(C) Chamba  (D) Solan

67. Which of the following Moravian monasteries are situated at Keylong, the headquarters of Lahul-Spiti District of H.P.?  

(A) Khardong  (B) Shashur

(C) Tayul  (D) All of these

68. At which place is the proposed H.P. Judicial Legal Academy being set up by the H.P. Govt.?

(A) Ghandal near Shimla  (B) Tara Devi near Shimla

(C) Saproon near Solan  (D) Kothipura near Bilaspur
69. Which country is helping Himachal Pradesh in promoting the cultivation of Jaitoon (olive)?

(A) France  (B) Canada
(C) Italy  (D) Germany

70. Which town in Himachal Pradesh has been selected under Smart City Mission (first phase)?

(A) Shimla  (B) Dharamsala
(C) Mandi  (D) Solan

71. Against which country did Indian Men's Hockey team register its only win at the 2016 Rio Olympics?

(A) Canada  (B) France
(C) Argentina  (D) None of these

72. In which state of India is Puttningal Devi temple?

(A) Tamil Nadu  (B) Kerala
(C) Karnataka  (D) Telangana
73. Which day is observed as Indian Navy Day?

(A) April 05  (B) November 30
(C) December 04  (D) December 07

74. At which place in Rajasthan is the Dargah of Sufi Saint Khwaja Moinuddin Chisti?

(A) Pushkar  (B) Boondi
(C) Alwar  (D) Ajmer

75. Which airport in India is named after Gopinath Bordoloi?

(A) Guwahati  (B) Pashighat
(C) Imphal  (D) Dimapur

76. Which is the country of origin of Omar Mateen who killed over 50 people in Florida in June 2016?

(A) Iran  (B) Afghanistan
(C) Iraq  (D) Syria
77. Consider the following with regard to President Barack Obama’s visit to Hiroshima Peace Memorial on May 27, 2016:

(i) He offered an apology on behalf of people of the United States.

(ii) He laid a wreath at the peace memorial.

(iii) He embraced a survivor of the 1945 bomb attack.

Which of the above are true?

(A) (i) and (ii) only

(B) (i) and (iii) only

(C) (ii) and (iii) only

(D) (i), (ii) and (iii)

78. Who among the following was named ‘Person of the year 2015’ by the U.S. magazine Time on December 09, 2015?

(A) Narendra Modi

(B) Angela Merkel

(C) Dilima Rousseff

(D) Donald Trump

79. Near which city of Cambodia a huge city complex surrounding a stone temple and iron smelting sites has been discovered?

(A) Phnom-Penh

(B) Battambang

(C) Kampong Chan

(D) Angkor Wat

80. When did Mother Teresa, who was elevated to Sainthood on September 04, 2016, pass away?

(A) 1996

(B) 1997

(C) 1998

(D) 2000
81. DNA is synthesized in the direction of:

(A) 5' to 3'  
(B) 3' to 5'

(C) 1' to 5'  
(D) 5' to 1'

82. The cells which line seminiferous tubules in testis of mammals are:

(A) Leydig cells  
(B) Sertoli cells

(C) Myoid cells  
(D) Interstitial cells

83. During muscle contraction which ions are necessary:

(A) Ca^{++}  
(B) Na^{+}

(C) K^{+}  
(D) Mg^{++}

84. The royal Bengal tiger is found in:

(A) Kaziranga  
(B) Rewa

(C) Sunderban  
(D) Jim Corbett

85. Nissil's granules are present in which type of cells?

(A) Muscles  
(B) Nerves

(C) Liver  
(D) Epithelial
86. Which of the following is not a hereditary disease?

(A) Thalassaemia  (B) Cystic fibrosis
(C) Cretinism  (D) Haemophilia

87. A sudden change in the structure and function of a gene is called as:

(A) Variation  (B) Mutation
(C) Linkage  (D) Heredity

88. In birds the crop milk is produced by:

(A) Male  (B) Female
(C) Both male and female  (D) Flight birds

89. Owl is:

(A) Diurnal  (B) Crepuscular
(C) Vesper tine  (D) Nocturnal

90. Monkeys are:

(A) Digitigrade  (B) Plantigrade
(C) Unguligrade  (D) Bradypus

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91. Scaly ant eater belongs to order:

(A) Eutheria  (B) Metatheria
(C) Prototheria  (D) Edentata

92. The Indian Pearl Oyster is:

(A) Pinctada  (B) Sepia
(C) Loligo  (D) Solen

93. Which group of animals was the first to evolve to fly:

(A) Reptiles  (B) Mammals
(C) Insects  (D) Birds

94. Coelomic fluid helps in the locomotion in:

(A) Hydra  (B) Earthworm
(C) Frog  (D) Starfish

95. The characteristic feature of Coelentrates is:

(A) Diploblastic  (B) Mésoglea
(C) Cnidoblasts  (D) Ostium
96. Which type of tissue is Blood?

(A) Epithelial  (B) Cardiac
(C) Connective  (D) Muscular

97. Antibodies are produced by:

(A) Lymphocytes  (B) Plasma cells
(C) RBCs  (D) T-cells

98. Pancreas secretes:

(A) Insulin  (B) Glucagon
(C) Pancreatic juice  (D) All (A), (B) and (C)

99. What is common in both striated and cardiac muscle cell?

(A) Shape  (B) Number
(C) Striations  (D) Contractions

100. The molecule that is the main source of ATP synthesis:

(A) Glucose  (B) Triglycerides
(C) Proteins  (D) Cholesterol