

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

TEST BOOKLET SERIES

TEST BOOKLET
PGT(BIOLOGY)-2016

B

Time Allowed : 2 Hours]

[Maximum Marks : 100

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.
Do not write anything else on the Test Booklet.
4. 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.
5. 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 :

(A) (B) ● (D)
6. 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.

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P.T.O.

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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 Lamjo
 - (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) Eturnagarma — 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

21. Which of the following plant yields the reserpine used in the treatment of hypertension ?
- (A) *Ranunculus* (B) *Rauwolfia*
(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 vessels are 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) *Cephaleuros* (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 Natürlichen 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

43. 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*

51. 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) Chlorophyceae

(B) Phaeophyceae

(C) Rhodophyceae

(D) Cyanophyceae

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

(A) Phaeophyceae

(B) Rhodophyceae

(C) Chlorophyceae

(D) Cyanophyceae

54. Two unequal flagella are present in zoospores in :

(A) Chlorophyceae

(B) Phaeophyceae

(C) Rhodophyceae

(D) Cyanophyceae

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 Puttingal 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 Oman 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) Dilma 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. Nissl'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) Ungligrade (D) Bradypus

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) Mesoglea
(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