

Sl. No. :

20003749

JSOB16

Register  
Number

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2016

Paper - I

BIOLOGY

(PG Degree Standard)

Time Allowed : 3 Hours]

[Maximum Marks : 300

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

1. This Booklet has a cover (this page) which should not be opened till the invigilator gives signal to open it at the commencement of the examination. As soon as the signal is received you should tear the right side of the booklet cover carefully to open the booklet. Then proceed to answer the questions.
2. This Question Booklet contains 200 questions. Prior to attempting to answer the candidates are requested to check whether all the questions are there in series without any omission and ensure there are no blank pages in the question booklet. In case any defect in the Question Paper is noticed it shall be reported to the Invigilator within first 10 minutes.
3. Answer all questions. All questions carry equal marks.
4. You must write your Register Number in the space provided on the top right side of this page. Do not write anything else on the Question Booklet.
5. An Answer Sheet will be supplied to you separately by the Invigilator to mark the answers.
6. You will also encode your Register Number, Subject Code, Question Booklet Sl. No. etc. with Blue or Black ink Ball point pen in the space provided on the side 2 of the Answer Sheet. If you do not encode properly or fail to encode the above information, action will be taken as per commission's notification.
7. Each question comprises *four* responses (A), (B), (C) and (D). You are to select **ONLY ONE** correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
8. In the Answer Sheet there are four circles (A), (B), (C) and (D) against each question. To answer the questions you are to mark with Blue or Black ink Ball point pen **ONLY ONE** circle of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. e.g. If for any item, (B) is the correct answer, you have to mark as follows :  

(A) ● (C) (D)
9. You should not remove or tear off any sheet from this Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the examination. After the examination is concluded, you must hand over your Answer Sheet to the Invigilator. You are allowed to take the Question Booklet with you only after the Examination is over.
10. The sheet before the last page of the Question Booklet can be used for Rough Work.
11. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.
12. Do not tick-mark or mark the answers in the Question booklet.

SEAL

1. Which stage of the life cycle of Anguomois grain moth Sitotroga Cerealella damages the wheat and paddy grains?
- ~~(A)~~ Caterpillar (B) Grub  
(C) Moth (D) Eggs
2. A chemical treatment which is an effective control measure against the leaf and plant hopper is
- (A) Quinol  
(B) Phylloquinol and Quinone  
~~(C)~~ Endosulfan and Carbofuran  
(D) Metachlor and Ampicillin
3. A larva which acts as a connecting link between the Echinoderms and Chordates
- (A) Starfish and Amphioxus  
(B) Glochidium larva  
~~(C)~~ Auricularia larva  
(D) Larva of starfish and Amphioxus
4. What is the identification key character of a non poisonous snake named Eryx johnii?
- (A) Hood on the dorsal side  
(B) Rattling sound by the tail  
(C) Tail is short and prehensile  
~~(D)~~ Blunt tail which resembles head
5. Lamarckism was proposed by the French evolutionist Lamarch in the year 1809 and it states that
- (A) Germplasm theory  
~~(B)~~ Use and Disuse theory  
(C) Theory of pangenesis  
(D) Species originated from a cell

6. Pearl is secreted as a protective measure by the  
~~(A)~~ Mantle (B) Radula  
(C) Byssus (D) Haemocoel
7. A median dorsal spine is characteristic of the larval form  
(A) Mysis (B) Protozoa  
~~(C)~~ Zoea (D) Alima
8. Sitophilus oryzae is a pest of  
(A) Sweet potato ~~(B)~~ Rice  
(C) Tapioca (D) Brinjal
9. Changes in the gene frequency brought about, purely by chance in small populations is called  
~~(A)~~ Genetic drift (B) Metamerism  
(C) Mutation (D) Recombination
10. Naming of plants and animals by two names is called  
(A) Trinomial nomenclature (B) Natural nomenclature  
~~(C)~~ Binomial nomenclature (D) Artificial nomenclature
11. Malpighian bodies have a double-walled capsule enclosing a network of capillaries called  
~~(A)~~ Glomerulus (B) Loop of Henle  
(C) Cortex (D) Calyx
12. Insulin is produced by the \_\_\_\_\_ of the islets of langerhans.  
(A) Alpha cells (B) Gamma cells  
~~(C)~~ Beta cells (D) Sigma cells

13. Muscles which are closely associated with skeletal system were grouped as

- (A) Unstriated muscles (B) Involuntary muscles  
(C) Autonomic muscles ~~(D) Striated muscles~~

14. Which among the following is not a function of hormone?

- (A) Metabolism in cells  
(B) Growth of a body  
~~(C) Transmission of nerve impulse~~  
(D) Parturition

15. The rate of cleavage process is determined by

- (A) Nucleus  
~~(B) Cytoplasm~~  
(C) Oestrogen and testosterone  
(D) Sperm and egg

16. Integument skin is derived from the germinal layer named as

- ~~(A) Ectoderm~~ (B) Endoderm  
(C) Mesoderm (D) Mesoglea

17. Match the following structure to their correct functions

- |            |                        |
|------------|------------------------|
| (a) Testes | 1. Copulatory organ    |
| (b) Ovary  | 2. Embryo implantation |
| (c) Penis  | 3. Spermatogenesis     |
| (d) Uterus | 4. Oogenesis           |

- |                | (a) | (b) | (c) | (d) |
|----------------|-----|-----|-----|-----|
| (A)            | 1   | 4   | 3   | 2   |
| (B)            | 2   | 1   | 3   | 4   |
| (C)            | 3   | 2   | 1   | 4   |
| <del>(D)</del> | 3   | 4   | 1   | 2   |

18. What is the economic importance of silkworm?

- (A) Saliva is used to manufacture paint
- (B) Worm is used as manure
- ~~(C) Silk and gut production~~
- (D) Secretes saliva for pearl formation

19. Cardiac muscle is

- (A) Smooth involuntary
- ~~(B) Striated involuntary~~
- (C) Striated voluntary
- (D) Smooth voluntary

20. The deposition of cholesteryl ester and other lipids in the connective tissues of the arterial walls leads to

- ~~(A) Atherosclerosis~~
- (B) Tay-Sachs disease
- (C) Gaucher disease
- (D) Fatty liver

21. Sphingomyelin contains the nitrogenous base

- (A) Serine
- ~~(B) Choline~~
- (C) Lysolecithin
- (D) Glycerol

22. Which of the following matches is incorrect?

- |                | Glycogen storage disease |   | Enzyme deficiency     |
|----------------|--------------------------|---|-----------------------|
| (A)            | Von Gierke's disease     | - | Glucose 6 phosphatase |
| (B)            | Pompe's disease          | - | Acid maltase          |
| (C)            | Limit dextrinosis        | - | Debrancher enzyme     |
| <del>(D)</del> | McArdle's disease        | - | Liver phosphorylase   |

23. If oral glucose tolerance test is conducted for a normal person, the blood glucose level reaches maximum in

(A) 15 minutes

~~(B)~~ 1 hour

(C) 2 hours

(D) 2½ hours

24. Ninhydrin reaction is specific to

~~(A)~~ Aminocarboxylic acids

(B) Carboxylic acids

(C) Aldehydes

(D) Ketones

25. Cephalins are

(A) Derived lipids

(B) Simple lipids

~~(C)~~ Phospho lipids

(D) Waxes

26. \_\_\_\_\_ plays an important role as  $\text{PO}_4$  acceptor in mitochondrial oxidative phosphorylation.

(A) ATP

(B) AMP

(C) CAMP

~~(D)~~ ADP

27. This hormone that influences the reabsorption of water from distal tubules and collecting ducts at kidney

(A) Oxytocin

~~(B)~~ Vasopressin

(C) Thyroglobulin

(D) Prolactin

28. The normal concentration of cholesterol in our body is

(A) 80 – 120 mg/100 ml of blood

(B) 100 – 150 mg/100 ml of blood

~~(C)~~ 140 – 250 mg/100 ml of blood

(D) 50 – 100 mg/100 ml of blood

29. Blood is collected for the diagnosis of filariasis during  
(A) early morning (B) day time  
(C) evening ~~(D) night time~~
30. Karl Landsteiner discovered blood group method in the year  
(A) 1910 (B) 1907  
~~(C) 1900~~ (D) 1905
31. Blood smear analysis can be used for the diagnosis of  
(A) Dengue fever (B) Viral fever  
(C) Typhoid ~~(D) Malaria~~
32. Which type of immunoglobulin is present in colostrum?  
(A) IgD (B) IgM  
~~(C) IgA~~ (D) IgE
33. In 'O' blood group individuals the serum contains both  
~~(A) Anti A and anti B antibodies~~  
(B) A and B antigen  
(C) Only anti 'A' antibody  
(D) Only anti 'B' antibody
34. What is a normal platelet count?  
(A) 1 million per cubic cc  
(B) 1 million per cubic mm  
~~(C) 2,50,000 per cubic mm~~  
(D) 10,000 per cubic mm

35. PAGE is a technique of separation of \_\_\_\_\_ based on their molecular weight and change density.
- ~~(A)~~ Proteins (B) Sugars  
(C) Lipids (D) Vitamins
36. Ames test is used to
- (A) detect bacteria (B) detect virus  
(C) detect enzymes ~~(D)~~ detect mutagens
37. Which type of Immunoglobulin is called as reagenic antibody?
- (A) IgA (B) IgG  
(C) IgM ~~(D)~~ IgE
38. The principles of Sanger's method relies on
- (A) Use of chemicals for base specific cleavage  
(B) Use of dNTP for chain termination  
~~(C)~~ Use of ddNTP for chain termination  
(D) Use of chemicals for <sup>32</sup>P chain termination
39. Which of the following technique is used in the separation of DNA?
- (A) Western blotting (B) Northern blotting  
~~(C)~~ Southern blotting (D) Flow cytometry
40. Erythrocytes are non-nucleated cells that contain the heaviest element called
- (A) Erythropoietin ~~(B)~~ Haemoglobin  
(C) Fibrinogen (D) Bilicubin



41. Who devised a system of classification based on the cellular organization of organisms?
- ~~(A)~~ Carl Woese (B) Carolus Linnaeus  
(C) Carl Landsteiner (D) Ernst Haeckel
42. Interferons inhibit the synthesis of
- ~~(A)~~ Viral RNA and proteins  
(B) Viral DNA and proteins  
(C) Viral proteins  
(D) Antiviral activity
43. The cat-scratch disease of domestic cats is caused by
- (A) Yersinia Pestis  
(B) Leptospira  
~~(C)~~ Bartonella henselae  
(D) Brucella spp.
44. The bacterial stock cultures are preserved at  $-196^{\circ}\text{C}$  by using one of the following
- (A) Liquid Nitrogen only  
(B) Liquid Hydrogen only  
~~(C)~~ Liquid Nitrogen with glycerol  
(D) Liquid Hydrogen with glycerol
45. Urease test was done to identify the following bacteria
- (A) Mycobacterium (B) Salmonella  
(C) Citro bacter ~~(D)~~ Proteus sps

46. "Codon Dictionary" is formulated by
- (A) Wobble
  - (B) Watson and Crick
  - (C) Kornberg
  - ~~(D)~~ Nirenberg and Khorana
47. The biological indicator commonly used to check the autoclaving process is
- (A) Spores of Bacillus, Stearo thermophilus
  - (B) Spores of Clostridium PA 3679
  - (C) Spores of Bacillus Subtilis
  - ~~(D)~~ Both (A) and (B)
48. Who is called as father of microbiology?
- (A) Robert Koch
  - ~~(B)~~ Antony Van Leewenhock
  - (C) Edward Jenner
  - (D) Louis Pasteur
49. Genetically modified strain of P. Putida  $P^R103$  in soil microcosm, degraded the herbicide
- (A) Uranium
  - (B) Ferrous Sulphate
  - ~~(C)~~ 2,4 Dichlorophenoxy acetic acid
  - (D) Dimethyl formic acid
50. The micro organisms deliberately used during World War II was
- (A) Clostridium Botulinum
  - ~~(B)~~ Bacillus anthracis
  - (C) Vibrio Cholerae
  - (D) Yersinia Pestis

51. MPN test is used to check the  
~~(A)~~ Quality of water (B) Pollution of water  
(C) Pollutants of water (D) Cleaning of water
52. Pvu I isolated from Proteus vulgaris is an example for  
(A) Type I restriction enzyme  
~~(B)~~ Type II restriction enzyme  
(C) Type III restriction enzyme  
(D) Type IV restriction enzyme
53. Geotrichum candidum is known to produce  
(A) Invertase enzyme (B) Pectinase enzyme  
~~(C)~~ Lipase enzyme (D) Amylase enzyme
54. The last stage of anaerobic digestion in the production of biogas is  
(A) Acidogenesis ~~(B)~~ Methanogenesis  
(C) Acetogenesis (D) Hydrolysis
55. PVC and polyamides are deteriorated by  
(A) Flavobacterium sp  
(B) Streptococcus pyogenes  
(C) Streptomyces griseus  
~~(D)~~ Streptomyces rutyreticuli
56. The peptide hormone insulin is synthesized and secreted by one of the following type of cells present in Islets of Langerhans  
~~(A)~~  $\beta$  (Beta) cells (B)  $\alpha$  (alpha) cells  
(C)  $\delta$  (delta) cells (D)  $\gamma$  (gamma) cells

57. Penicillin G<sup>+</sup> produced by  
~~(A)~~ p. chrysogenum (B) p. notatum  
(C) p. griseofulvum (D) penicillium sps.
58. The introduction of microorganisms in the contaminated soil to facilitate biodegradation is known as  
(A) Biostimulation (B) Insitu bioremediation  
~~(C)~~ Bioaugmentation (D) Bioventing
59. In which edition of International Code of Botanical Nomenclature (ICBN) the word taxon has been introduced  
(A) 1950 ~~(B)~~ 1956  
(C) 1959 (D) 1968
60. The modern equivalent of the "Natural order" by the ICBN is  
~~(A)~~ Family (B) Order  
(C) Genus (D) Species
61. Caryopsis is a type of fruit in Angiospermic plants, which signifies that  
(A) Pericarp differentiated into epicarp and mesocarp  
~~(B)~~ Pericarp fused with seed coat  
(C) Pericarp free from seed coat  
(D) Pericarp not found
62. Which cell organelle is anabolic?  
(A) Mitochondrion (B) Ribosome  
(C) Golgibody ~~(D)~~ Chloroplast

63. The predominant constituent element in terms of percentage in the protein molecule is  
(A) Hydrogen ~~(B) Carbon~~  
(C) Oxygen (D) Nitrogen
64. Which organelle has all the enzymes necessary for the complete oxidation of pyruvic acid to  $\text{CO}_2$  and water?  
(A) Chloroplast ~~(B) Mitochondrion~~  
(C) Ribosome (D) Lysosome
65. Find the family which is not showing crassulacean acid metabolism  
(A) Cactaceae (B) Agavaceae  
(C) Portulacaceae ~~(D) Annonaceae~~
66. Wander plasm is found in the young oogonium of  
(A) Oedogonium (B) Cladophora  
(C) Chara ~~(D) Vaucheria~~
67. *Puccinia recondita* causes \_\_\_\_\_ rust of wheat.  
(A) Black (B) Yellow  
~~(C) Brown~~ (D) White
68. Bryophytes do not grow tall because  
(A) they have poorly developed sex organs  
~~(B) they lack xylem and phloem tissues to conduct water and food~~  
(C) their sporophytes produce spores  
(D) they possess rhizoids to absorb water

69. Which of the following biogeochemical cycles has both atmospheric phase and a lithospheric phase?
- (A) carbon cycle (B) nitrogen cycle  
(C) phosphorous cycle ~~(D) sulphur cycle~~
70. Vegetation of Sunderbans is
- (A) deciduous type (B) temperate evergreen  
~~(C) mangrove type~~ (D) desert type
71. Viviparous may be described as .
- (A) germination of seed with cotyledons under the soil  
(B) germination of seed with cotyledons above the soil  
~~(C) development of seedling within an attached fruit~~  
(D) formation of fruit without pollination
72. Richest source of linoleic acid is
- ~~(A) safflower oil~~ (B) corn oil  
(C) groundnut oil (D) mustard oil
73. Opium is obtained from
- ~~(A) Papaver somniferum~~ (B) Papaya carica  
(C) Thea sinesis (D) Digitalis purpurea
74. A medicine for bronchitis is obtained from
- (A) Rauwolfia serperntine (B) Curcuma longa  
~~(C) Adhatoda vasica~~ (D) Hemidesmus indicus

75. The phenomenon of linkage was first observed in the plant
- ~~(A)~~ Lathyrus odoratus (B) Pisum sativum  
 (C) Cucurbita pepo (D) Mirabilis jalapa

76. Match the following

The phenotypic ratio of F<sub>2</sub> generation is

- |                                            |    |        |
|--------------------------------------------|----|--------|
| (a) Complementary gene interaction         | 1. | 12:3:1 |
| (b) Dominant epistasis                     | 2. | 9:6:1  |
| (c) Recessive epistasis                    | 3. | 9:7    |
| (d) Duplicate genes with cumulative effect | 4. | 9:3:4  |

- |                | (a) | (b) | (c) | (d) |
|----------------|-----|-----|-----|-----|
| (A)            | 2   | 3   | 1   | 4   |
| (B)            | 1   | 4   | 2   | 3   |
| <del>(C)</del> | 3   | 1   | 4   | 2   |
| (D)            | 4   | 3   | 2   | 1   |

77. Restriction Fragment Length Polymorphism (RFLP) is used to identify a specific
- (A) Protein ~~(B)~~ DNA  
 (C) RNA (D) Both DNA and RNA

78. The vascular cambium and cork cambium are the examples of
- (A) Apical meristem ~~(B)~~ Lateral meristem  
 (C) Intercalary meristem (D) Elements of xylem and phloem

79. Presence of Casparian strip is characteristic feature of
- ~~(A)~~ Endodermis (B) Exodermis  
 (C) Epidermis (D) Pericycle

80. The concept of Nature - Man - Spirit complex proposed by  
(A) T.N. Madan (B) A.C. Mayer  
~~(C)~~ L.P. Vidyarthi (D) D.N. Majumdar
81. The Lascaux cave is located in  
(A) Europe ~~(B)~~ France  
(C) Australia (D) China
82. Rites symbolising birth, marriage and death are called  
(A) Initiation rites ~~(B)~~ Rites of passage  
(C) Rites of reversal (D) Rites of confirmation
83. Who among the following critiqued the so called western theories of kinship by accusing its supporters of being ethnocentric?  
(A) Levi - Strauss (B) Edmund Leach  
(C) Robin Fox ~~(D)~~ David M. Schneider
84. Who has proposed the concept of Dominant Cashe?  
(A) L.P. Vidayarthi (B) F.G. Bailey  
~~(C)~~ M.N. Srinivas (D) S.C. Dubey
85. The Masai is the tribe of  
(A) India (B) Australia  
(C) North America ~~(D)~~ Africa
86. Adaptation  
(A) a beneficial adjustment (B) a conscious choice  
~~(C)~~ both (A) and (B) are true (D) both (A) and (B) are false



87. The genealogical method was invented in Anthropology by  
~~(A)~~ W.H.R. Rivers (B) Meyer Fortes  
(C) Edmund Leach (D) Raymond Firth
88. The formal custom of a man to marry a woman of the category of his mother's brother's daughter means  
(A) Restricted exchange  
~~(B)~~ Generalized exchange  
(C) Delayed exchange  
(D) No exchange
89. The use of finger print for identification known as  
~~(A)~~ Dactylography (B) Anthropometry  
(C) Limnology (D) Palynology
90. Classification of the Indian race was done by  
(A) I.P. Singh (B) D.P. Mukherjee  
~~(C)~~ S.S. Sarkar (D) P.C. Biswas
91. Darwin's theory was unable to explain the  
(A) Natural selection  
(B) Struggle for existence  
~~(C)~~ Variation  
(D) Survival of the fittest

92. Osteoporosis

- (A) Disease characterized by the thinning of bones
- (B) Bone marrow disease
- (C) Skeletal weakness
- (D) Bone densitometry

93. Identify the correct sequence of the cephalo-caudal bones of human skeleton

- (A) Skull-Sternum-Pelvis-Femur-Tibia
- (B) Sternum-Pelvis-Skull-Femur-Tibia
- (C) Skull-Pelvis-Sternum-Femur-Tibia
- (D) Skull-Pelvis-Sternum-Tibia-Femur

94. Which one set is not correctly matched?

- (A) Hardy-Weinberg equilibrium – Gene frequency
- (B) Polygenic inheritance – Skin colour
- (C) Multiple alleles – ABO blood group system
- (D) Structural disorder of haemoglobin – Thalassaemia

95. Auxology means

- (A) the study of finger prints
- (B) the study of adaptation of organisms
- (C) the study of subsistence patterns
- (D) the study of growth and development

96. Circular DNA is found in

- (A) Ribosomes
- (B) Golgi bodies
- (C) Mitochondria
- (D) Lysosomes

97. Choose the specific order of insect metamorphosis
- (A) Imago, Egg, II<sup>nd</sup> Instar, Pupa
  - (B) I<sup>st</sup> Instar, Egg, Larva, Imago
  - ~~(C)~~ Egg, Larva, Pupa, Imago
  - (D) Egg, Pupa, II<sup>nd</sup> Instar, Imago
98. The scrutiny of established matings is called
- ~~(A)~~ Pedigree analysis
  - (B) Karyo typing
  - (C) Amniocentesis
  - (D) Dominance
99. In which character vertebrates do differ from invertebrates?
- (A) Coelom
  - (B) Tail
  - (C) Brain Cord
  - ~~(D)~~ Dorsal tubular nerve cord
100. Which parts are required for the process of regeneration to occur in hydra, a lower form of phylum coelenterata?
- ~~(A)~~ Epidermis, gastrodermis and hypostome
  - (B) Tentacles, epidermis and hypodermis
  - (C) Mouth, tentacles and endodermis
  - (D) Pedal discs and basal discs
101. The burrowing marine animal belongs to the sub-phylum-Hemichordata
- ~~(A)~~ Balanoglossus
  - (B) Mud skipper
  - (C) Sea urchin
  - (D) Snail

102. Germ layer Endoderm in an embryo will give rise to an organ  
(A) Brain (B) Muscles  
(C) Eyes ~~(D) Digestive organ~~
103. An analysis which helps in the identification of genes and gives information about the mode of its inheritance is known as  
~~(A) Pedigree analysis~~  
(B) Astrological analysis  
(C) Sequential analysis of genes  
(D) Gene splicing
104. Genetic disease Albinism in human is an  
(A) Allosomal dominant trait  
~~(B) Autosomal recessive trait~~  
(C) Sexually transmitted disease  
(D) Allosomal recessive trait
105. Name the type of evolution by which the development of new adaptive types by a population leading to the formation of species, genera, family and order  
(A) Micro evolution  
(B) Hardy Weinberg evolution  
(C) Geographical evolution  
~~(D) Macro evolution~~
106. Megalopa is the larval form of  
~~(A) Crab~~ (B) Prawn  
(C) Squilla (D) Lobster

107. Which of the following scientists developed the process of DNA finger printing?  
(A) Kary B. Mullis ~~(B) Alec Jeffreys~~  
(C) T.H. Morgan (D) H.O. Smith
108. The propulsion of chyme in the intestine is called  
~~(A) Peristalsis~~ (B) Segmentation  
(C) Filling (D) Secretion
109. The Cowper's glands of a human male reproductive organs produces a transparent, sticky fluid which protects the sperms from  
~~(A) Acid reaction~~ (B) Apoptosis  
(C) Maturing (D) Lysis
110. When an effective stimulus is provided to the heart, it will produce a maximum response making all the fibres to contract. This is called  
(A) Staircase phenomenon  
(B) Refractory period  
(C) Threshold stimulus  
~~(D) 'All-or-none' law~~
111. The alimentary canal is a derivative of  
(A) Mesoderm ~~(B) Endoderm~~  
(C) Ectoderm (D) Diverticulum
112. Number of Nephrons found in the kidneys of man is  
(A) 200 ~~(B) 2 millions~~  
(C) 10 (D) 10,000

113. An equation

$$= \frac{\text{Oxygen Consumed/Minute}}{\text{Arterial O}_2 \text{ Content} - \text{Venous O}_2 \text{ Content}}$$

will denote one among the following

- (A) Respiratory Quotient
- (B) Calorific Value
- ~~(C) Cardiac Output~~
- (D) Enzyme Kinetics

114. What is the duration of each circadian rhythms?

- ~~(A) 24 hours~~
- (B) One month
- (C) 100 years
- (D) 1000 years

115. What are the two basic types of morphogenetic movements involved in the Gastrulation?

- ~~(A) Epiboly and Emboly~~
- (B) Entropy and Enthalpy
- (C) Ectoderm and Endoderm
- (D) Epidemic and Endemic

116. What is the function of the Oestrogen hormone?

- ~~(A) Development of secondary sexual character in girl~~
- (B) Development of secondary sexual character in boy
- (C) Growth of the body
- (D) Sperm production

117. There are \_\_\_\_\_ main types of WBC in a human.

- (A) 2
- (B) 3
- (C) 4
- ~~(D) 5~~

118. Hemolytic anemia is caused by the deficiency of the enzyme
- (A) Fructose 6-phosphate dehydrogenase
  - (B) Fructose 1,6 bisphosphatase
  - ~~(C)~~ Glucose 6-phosphate dehydrogenase
  - (D) Ribulose 5-phosphate epimerase
119. Which one contains Dihydrouracil loop?
- (A) mRNA
  - ~~(B)~~ tRNA
  - (C) rRNA
  - (D) hnRNA
120.  $\alpha$  helix and  $\beta$ -pleated nature of proteins represent
- (A) Primary structure
  - (B) Tertiary structure
  - (C) Globular structure
  - ~~(D)~~ Secondary structure
121. This DNA is longer, left handed helix and has 12 base pairs with a pitch of 4.56 nm/helix turn. It is \_\_\_\_\_
- (A) A-DNA
  - ~~(B)~~ Z-DNA
  - (C) B-DNA
  - (D) C-DNA
122. Von Gierke's disease, occurs due to deficiency of
- (A) Hexokinase
  - ~~(B)~~ Glucose-6-phosphatase
  - (C) Debrancher enzyme
  - (D) Phospho-fructokinase
123. Fructose and glucose are hexose monosaccharides structurally differ by functional groups on
- ~~(A)~~ Carbon-2
  - (B) Carbon-5
  - (C) Carbon-3
  - (D) Carbon-4

124. Steroid hormones are synthesised from

- (A) Adenine (B) Protein  
(C) Vitamin ~~(D) Cholesterol~~

125. The hormone measured in urine to test pregnancy is

- (A) Anterior pituitary luteinizing hormone  
(B) Androgen  
(C) Progesterone  
~~(D) Human chorionic gonadotropin~~

126. The major molecules responsible for rejection of transplant is

- (A) B-cells (B) T-cells  
~~(C) MHC molecules~~ (D) Antibodies

127. Which one of the following involves the formation of Nitrate from Ammonia?

- (A) Ammonification (B) Nitrogen Fixation  
(C) Denitrification ~~(D) Nitrification~~

128. The enzyme administered therapeutically for treating Acute myocardial infarction is

- ~~(A) Streptokinase (or) Urokinase~~ (B) Arginase  
(C)  $\alpha$ -Amylase (D)  $\alpha$ -Asparaginase

129. The mobility of protein molecules in an electrophoretic field is based on

- (A) Electric charges  
(B) Molecular weight  
~~(C) Both electric charges and molecular weight~~  
(D) Affinity on the gel



130. Immunoglobulin classes must be distinguished by the type of
- (A) Light chains they possess
  - (B) Carbohydrate on their light chains
  - (C) Constant regions in their light chains
  - ~~(D)~~ Heavy chains they possess
131. The commonly used preservative for 24 hour urine sample is
- (A) Trichloroacetic acid
  - ~~(B)~~ Thymol
  - (C) Heparin
  - (D) Ammonium chloride
132. In agarose gel electrophoresis, the DNA is mostly stained with
- (A) Coomassie brilliant blue
  - (B) Indigo dye
  - (C) Titan yellow
  - ~~(D)~~ Ethidium bromide
133. Maxam and Gilbert's method is applied in
- ~~(A)~~ DNA sequencing
  - (B) Protein sequencing
  - (C) Aminoacid sequencing
  - (D) DNA cloning
134. The average amount of blood in an adult is \_\_\_\_\_ litres.
- (A) 2
  - (B) 3
  - ~~(C)~~ 5
  - (D) 7
135. The cross linking agent used for polyacrylamide gel formation is
- (A) Acrylamide
  - (B) Bis acrylamide
  - ~~(C)~~ TEMED
  - (D) Ethidium bromide

136. Heterogenous family of glycoproteins in serum produced specifically for an antigen are
- (A) Haptens  
(B)  $\gamma$ -globulins  
~~(C) Antibodies~~  
(D) Adjuvant
137. Nipah virus causes
- (A) Influenza  
(B) ~~Encephalitis~~  
(C) Panophthalmitis  
(D) Ophisthotomous
138. Late blowing in cheese production is due to
- ~~(A) Clostridium butyricum~~  
(B) Clostridium perfringes  
(C) Bacillus cereus  
(D) Pseudomonas, Byocyanas
139. In Mantoux test, a Purified Protein Derivative (PPD) is injected intracutaneously to detect which of the following diseases?
- (A) Leptospirosis  
(B) Mycoplasmosis  
(C) Aspergillosis  
~~(D) Tuberculosis (TB)~~
140. The ultimate resolution of an electron microscope is
- (A) 0.02 nm  
(B) ~~0.5 nm~~  
(C) 0.1 nm  
(D) 1.5 nm
141. The food-borne botulism, a food poisoning, that is caused by clostridium botulinum produces one of the following toxin
- (A) Exotoxin  
(B) ~~Neurotoxin~~  
(C) Enterotoxin  
(D) Extra cellular toxin

142. The most common nosocomial infection is
- (A) Surgical wounds
  - ~~(B)~~ Urinary tract infection
  - (C) Bacteremia
  - (D) Burn wounds
143. *M. Leprae* can be cultivated in
- ~~(A)~~ 9 B Aramidallo
  - (B) 7 B Aramidallo
  - (C) 5 B Aramidallo
  - (D) 10 B Aramidallo
144. Preservation of micro organisms in liquid nitrogen at  $-196^{\circ}\text{C}$  and cultures of fastidious microorganisms have been preserved for more than 15 years. This is called \_\_\_\_\_ method
- (A) Mineral oil slant
  - (B) Drying
  - (C) Lyophilization
  - ~~(D)~~ Ultra freezing
145. Which of the following media would be used to cultivate anaerobe?
- ~~(A)~~ Reducing media
  - (B) Enrichment media
  - (C) Differential media
  - (D) Complex media
146. Time taken to kill 90% of a population in a given temperature is known as
- (A) Generation time
  - ~~(B)~~ Decimal reduction time
  - (C) Thermal death point
  - (D) Thermal death time

147. *S. Cerevisiae* produce the enzyme
- (A) Glucose oxidase                      ~~(B) Invertase~~  
(C) Cellulase                                (D) Trypsinase
148. IPM stands for
- ~~(A) Integrated Pest Management~~            (B) Integrated Plant Management  
(C) Integrated Plant-pest Management      (D) Integrated Pest Manufacturer
149. Hybridoma are made by
- (A) Fusing T cells with myeloma cells  
(B) Fusing B cells with myeloma cells  
(C) Fusing T helper cells and myloema cells  
~~(D) Fusing B memory cells and myloema cells~~
150. Which of the following accumulates the factory wastes?
- (A) *P-aurogenosa*                              (B) *Thiobacillus*  
(C) *P. putida*                                    ~~(D) Zoogloea ramigera~~
151. Gene mutation occurs at the time of
- (A) DNA repair                                ~~(B) DNA replication~~  
(C) Cell division                                (D) RNA transcription
152. The similarity of specific DNA fragments generated by restriction endonuclease digestion is compared using
- (A) Radio immunoassay                      (B) Elisa method  
~~(C) Genomic finger printing~~                (D) Ribotyping

153. High levels of clay soil interferes and restricts the infection of banana rootlets caused by  
 (A) Micromonospora sp (B) TMV  
 (C) Red rot fungus ~~(D) Fusarium oxysporum~~
154. The height where the stratospheric temperatures stop increasing, leading to a thin zone is called \_\_\_\_\_  
 (A) troposphere ~~(B) stratopause~~  
 (C) mesosphere (D) mesopause
155. Who isolated 6 large hypervariable fragments from DNA finger prints?  
~~(A) Wang et.al~~ (B) Alec Jeffrey  
 (C) Bostein (D) Davis
156. Nuclear Polyhedrosis Viruses (NPVs) that belongs to sub group of Baculoviruses were used to control one of the following insect pest  
 (A) Spider mites (B) Aphid pests  
~~(C) Helothis sp~~ (D) Colorado beetle
157. Koumiss is produced from mare's milk due to fermentation by the starter culture  
 (A) Leuconostoc mesenteroides sub sp. cremoris  
 (B) Lactobacillus lactis  
~~(C) Lactobacillus delbruckii~~ sub sp. bulgaricus  
 (D) Leuconostoc citrovorum
158. Which termination codon is called as ochre codon?  
 (A) AUG (B) UAG  
~~(C) UAA~~ (D) UGA

159. The cell membrane which allows only water but no solute particles to pass through is
- (A) Semi permeable plasma membrane
  - (B) Selective permeable plasma membrane
  - (C) Impermeable plasma membrane
  - (D) Dialysing plasma membrane
160. The major type of lipid component found in the mitochondrial membrane is
- (A) Simple lipids
  - (B) Triglycerides
  - (C) Phospholipids
  - (D) Cardiolipin
161. The formation of tyloses in the xylem vessels when the invasion of pathogens into host cells helps to
- (A) check the fungal growth
  - (B) speed up the fungal growth
  - (C) check the invasion of pathogen
  - (D) easy penetration of pathogen
162. The fungus which requires more than one host to complete its life cycle, is called as
- (A) Autoecious
  - (B) Heteroecious
  - (C) Macrocytic
  - (D) Pleomorphic
163. The absorption of the food material by the pathogen from the host cells is through
- (A) Appressorium
  - (B) Infection hypha
  - (C) Haustorium
  - (D) Hyphal walls
164. In an enzyme catalysed reaction pathway by series of enzyme, the inhibition of first step by final product is
- (A) Feed back regulation
  - (B) Enzyme degradation
  - (C) Control of enzyme synthesis
  - (D) Activation of latent enzymes

165. In Marsilea, the sporangium produced within a specialized structure is known as  
~~(A)~~ Sporocarps (B) Sporophylls  
(C) Cones (D) Ascocarps
166. In Cycas, the presence of \_\_\_\_\_ root has symbiotic association with members of \_\_\_\_\_.  
(A) Coralloid root and green alga  
~~(B)~~ Coralloid root and blue green alga  
(C) Pnematophore and green alga  
(D) Rhizophore and blue green alga
167. Lichens are the symbiotic combinations between the members of  
(A) Blue green alga and Ascomycetes  
(B) Green alga and Basidiomycetes  
~~(C)~~ Green alga and Ascomycetes  
(D) Red alga and Basidiomycetes
168. The early gymnosperms were evolved in the Geological periods of  
(A) Lower Devonian and Silurian  
~~(B)~~ Lower Carboniferous and upper carboniferous  
(C) Upper Silurian and Silurian  
(D) Carboniferous and Permian
169. How many linkage groups are found in Maize?  
(A) 20 ~~(B)~~ 10  
(C) 5 (D) 15
170. pH of sea water is  
~~(A)~~ 7.8 (B) 7.6  
(C) 7.0 (D) 6.8

171. Which one of the following plants is a rich variety of timber?  
(A) Cassia fistula ~~(B) Dalbergia sissoo~~  
(C) Acacia arabica (D) Morus alba
172. Ocimum sanctum belongs to the family  
(A) Meliaceae (B) Acanthaceae  
(C) Liliaceae ~~(D) Lamiaceae~~
173. The most important drug used to cure malarial disease is  
(A) Reserpine ~~(B) Quinine~~  
(C) Vincastin (D) Vinblastin
174. Porogamy is  
(A) fertilization in which pollen tube enters the ovule through integument  
(B) fertilization in which pollen tube enters the ovule through funicle  
(C) fertilization in which pollen tube enters the ovule through chalaza  
~~(D) fertilization in which pollen tube enters the ovule through micropyle~~
175. An embryo may sometimes develop from a cell of an embryosac other than the egg. This is called as  
(A) Apospory (B) Parthenogenesis  
(C) Parthenocarpy ~~(D) Apogamy~~
176. The role of double fertilization in angiosperm is to produce  
(A) cotyledons (B) integuments  
~~(C) endosperm~~ (D) endocarp



177. A true fruit is the one where

- (A) only ovary of the flower develops into fruit
- (B) ovary and calyx of the flower develops into fruit
- (C) ovary, calyx and thalamus of the flower develops into fruit
- (D) all floral whorls of the flower develops into fruit

178. The custom in which two or more of a polygynous man's wives are sisters

- (A) Paternal polyandry
- (B) Serial monogamy
- (C) Sororal polygyny
- (D) Levirate

179. The concept of little and great tradition propounded by

- (A) M.N. Srinivas
- (B) Robert Redfield
- (C) S.G. Morup
- (D) Red - Cliffe - Brown

180. Which one is the dental formula of old-world monkeys?

- (A) 2.2.1.3
- (B) 1.3.2.1
- (C) 2.2.1.1
- (D) 2.1.2.3

181. The sense of confusion and disorientation field workers may experience upon entering the field

- (A) rapport building
- (B) ethnocentrism
- (C) cultural relativism
- (D) culture shock

182. Snow ball sampling is otherwise called as

- (A) Respondent - driven sampling
- (B) Chain referral sampling
- (C) Network sampling
- (D) All the above are correct

183. The silent trade was practised by

(A) African tribes

(B) American tribes

(C) Judian tribes

~~(D)~~ Melanisium tribes

184. Who is the author of the book "Primitive Culture"?

(A) Lewis H. Morgan

~~(B)~~ E.B. Tylor

(C) A.C. Haddon

(D) Henry Maine

185. Holism means

(A) Completeness

(B) Wholeness

(C) Togetherness

~~(D)~~ Relationship of parts with the whole

186. The Onge tribes are found in

(A) Orissa

~~(B)~~ Andaman Islands

(C) Andra Pradesh

(D) Tamil Nadu

187. What is a quantitative research method among the following?

(A) Observation

(B) Interview

~~(C)~~ Survey

(D) Case study

188. How many tribes in Tamil Nadu were treated as particularly vulnerable tribal groups?

(A) Five

(B) Four

~~(C)~~ Six

(D) Eight

189. Identify the correct sequence of landmarks on mid sagittal plane of the cranium

- (A) Lambda – Bregma – Glabella – Nasion – Prosthion
- (B) Prosthion – Nasion – Glabella – Bregma – Lambda
- (C) Glabella – Prosthion – Nasion – Bregma – Lambda
- (D) Bregma – Glabella – Prosthion – Nasion – Lambda

190. The term evolution was first applied by

- (A) Herbert Spencer
- (B) Sudrez
- (C) Aristotle
- (D) Darwin

191. The most commonly used method of sequencing DNA was developed by

- (A) Oswald Avery
- (B) Barbara Mc Clintock
- (C) Francis Crick
- (D) Fred Sanger

192. Biological Anthropologist who study human growth are known as

- (A) Ethnologist
- (B) Nosologist
- (C) Phiologist
- (D) Auxologist

193. White skin people are also known as

- (A) Leucoderms
- (B) Xanthoderms
- (C) Melanoderms
- (D) Eueroderms

194. The highest polymorphism among human blood antigen is shown by

- (A) Rh system
- (B) ABO system
- (C) HLA system
- (D) MNSs system

195. Who is considered as the father of physical anthropology?  
 (A) Johann Friedrich Blumenbach  
(B) Georges Cuvier  
(C) Ashley Montague  
(D) Juan Comas
196. First scientific studies in genetics were carried out by  
(A) Joseph Kolreuter  
(C) Jhon Goss  
 (B) Gregor Jhon Mendel  
(D) Bateson
197. A gene is made up of  
(A) DNA  
 (C) Either DNA or RNA  
(B) RNA  
(D) Amino acids
198. Genetic drift also known as  
(A) Adaptive radiation  
 (C) Sampling error  
(B) Gene sequencing  
(D) Isolation
199. Find out the column which is wrongly matched  
(A) Charles Darwin - Use and disuse of organs  
 (B) J.B. Lamarck - Struggle for existence  
(C) Gregor Mendel - Law of inheritance  
(D) Carl Von Linne - Early taxonomy
200. Man is an orthograde animal according to  
(A) Anterior position  
(C) Frontal position  
(B) Ventral position  
 (D) Anatomical position