

# SUBJECT - BIOLOGY

Time : 3 :00 Hrs. समय : 3 घंटे

Max. Marks (अधिकतम अंक): 720

READ THE INSTRUCTIONS CAREFULLY (कृपया इन निर्देशों को ध्यान से पढ़ें)

Important Instructions:	महत्वपूर्ण निर्देश :
1. The Answer Sheet is inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars on <b>Side-1</b> and <b>Side-2</b> carefully with <b>blue/black</b> ball point pen only.	1. उत्तर पत्र इस परीक्षा पुस्तिका के अन्दर रखा है। जब आपको परीक्षा पुस्तिका खोलने को कहा जाए, तो उत्तर पत्र निकाल कर <b>पृष्ठ-1</b> एवं <b>पृष्ठ-2</b> पर केवल <b>नीले/काले</b> बॉल पॉइंट पेन से विवरण भरें।
2. The test is of <b>3 hours</b> duration and Test Booklet contains <b>180 questions</b> . Each question carries <b>4 marks</b> . For each correct response, the candidate will get <b>4 marks</b> . For each incorrect response, <b>one mark</b> will be deducted from the total scores. The maximum marks are <b>720</b> .	2. परीक्षा की अवधि <b>3 घंटे</b> है एवं परीक्षा पुस्तिका में <b>180</b> प्रश्न हैं। प्रत्येक प्रश्न <b>4 अंक</b> का है। प्रत्येक सही उत्तर के लिए परीक्षार्थी को <b>4 अंक</b> दिए जाएंगे। प्रत्येक गलत उत्तर के लिए कुल योग में से <b>एक अंक</b> घटाया जाएगा। अधिकतम अंक <b>720</b> हैं।
3. Use <b>Blue/Black Ball Point Pen</b> only for writing particulars on this page/markings response.	3. इस पृष्ठ पर विवरण अंकित करने एवं उत्तर पत्र पर निशान लगाने के लिए <b>केवल नीले/काले बॉल पॉइंट पेन</b> का प्रयोग करें।
4. Rough work is to be done on the space provided for this purpose in the Test Booklet only.	4. रफ कार्य इस परीक्षा पुस्तिका में निर्धारित स्थान पर ही करें।
5. <b>On completion of the test, the candidate must handover the Answer Sheet to the invigilator in the Room/Hall. The candidates are allowed to take away this Test Booklet with them.</b>	5. <b>परीक्षा सम्पन्न होने पर, परीक्षार्थी कक्ष/हॉल छोड़ने से पूर्व उत्तर पत्र कक्ष निरीक्षक को अवश्य सौंप दें। परीक्षार्थी अपने साथ प्रश्न पुस्तिका को ले जा सकते हैं।</b>
6. The CODE for this <b>Booklet</b> is _____. Make sure that the CODE printed on <b>Side-2</b> of the Answer Sheet is the same as that on this Booklet. In case of discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of both the Test Booklets and the Answer Sheets.	6. इस पुस्तिका का संकेत है _____. यह सुनिश्चित कर लें कि इस पुस्तिका का संकेत, उत्तर पत्र के <b>पृष्ठ-2</b> पद छपे संकेत से मिलता है। अगर यह भिन्न हो, तो परीक्षार्थी दूसरी परीक्षा पुस्तिका और उत्तर पत्र लेने के लिए निरीक्षक को तुरन्त अवगत कराएं।
7. The Candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your roll no. anywhere else except in the specified space in the Test Booklet/Answer Sheet.	7. परीक्षार्थी सुनिश्चित करें कि इस उत्तर पत्र को मोड़ा न जाए एवं उस पर कोई अन्य निशान न लगाएं। परीक्षार्थी अपना अनुक्रमांक प्रश्न पुस्तिका/उत्तर पत्र में निर्धारित स्थान के अतिरिक्त अन्यत्र न लिखें।
8. Use of white fluid for correction is <b>NOT</b> permissible on the Answer Sheet.	8. उत्तर पत्र पर किसी प्रकार के संशोधन हेतु व्हाइट फ्लूइड के प्रयोग की अनुमति <b>नहीं</b> है।

In case of any ambiguity in translation of any question, English version shall be treated as final.

प्रश्नों के अनुवाद में किसी अस्पष्टता की स्थिति में, अंग्रेजी संस्करण को ही अन्तिम माना जायेगा।

Name of the Candidate (in Capital letters) : \_\_\_\_\_

Roll Number : in figures :         in words : \_\_\_\_\_

Name of Examination Centre (in Capital letters) : \_\_\_\_\_

Candidate's Signature: \_\_\_\_\_ Invigilator's Signature: \_\_\_\_\_

1. Which one of the following statements is correct with reference to enzymes?  
 (1) Apoenzyme = Holoenzyme + Coenzyme      (2) Holoenzyme = Apoenzyme + Coenzyme  
 (3) Coenzyme = Apoenzyme + Holoenzyme      (4) Holoenzyme = Coenzyme + Co-factor

**Ans.** (2)

2. Which cells of 'Crypts of Lieberkuhn' secrete antibacterial lysozyme?  
 (1) Argentaffin cells      (2) Paneth cells      (3) Zymogen cells      (4) Kupffer cells

**Ans.** (2)

3. Phosphoenol pyruvate (PEP) is the primary CO<sub>2</sub> acceptor in:  
 (1) C<sub>3</sub> plants      (2) C<sub>4</sub> plants      (3) C<sub>2</sub> plants      (4) C<sub>3</sub> and C<sub>4</sub> plants

**Ans.** (2)

4. Match the following sexually transmitted diseases (Column - I) with their causative agent (Column - II) and select the Correct option.

	Column - I		Column - II
(a)	Gonorrhoea	(i)	HIV
(b)	Syphilis	(ii)	Neisseria
(c)	Genital Warts	(iii)	Treponema
(d)	AIDS	(iv)	Human Papilloma - Virus

Options :

	(a)	(b)	(c)	(d)
(1)	(ii)	(iii)	(iv)	(i)
(2)	(iii)	(iv)	(i)	(ii)
(3)	(iv)	(ii)	(iii)	(i)
(4)	(iv)	(iii)	(ii)	(i)

**Ans.** (1)

5. Which among the following are the smallest living cells, known without a definite cell wall, pathogenic to plants as well as animals and can survive without oxygen ?

(1) Bacillus      (2) Pseudomonas      (3) Mycoplasma      (4) Nostoc

**Ans.** (3)

6. Which one from those given below is the periods for Mendel's hybridization experiments?

(1) 1856 – 1863      (2) 1840 – 1850      (3) 1857 – 1869      (4) 1870 - 1877

**Ans.** (1)

7. Flowers which have single ovule in the ovary and are packed into inflorescence are usually pollinated by:

(1) Water      (2) Bee      (3) Wind      (4) Bat

**Ans.** (3)

8. Asymptote in a logistic growth curve is obtained when :
- (1) The value of 'r' approaches zero (2)  $K = N$   
 (3)  $K > N$  (4)  $K < N$

Ans. (2)

9. Out of 'X' pairs of ribs in humans only 'Y' pairs are true ribs. Select the option that correctly represents values of X and Y and provides their explanation :

(1)	X = 12, Y = 7	True ribs are attached dorsally to vertebral column and ventrally to the sternum.
(2)	X = 12, Y = 5	True ribs are attached dorsally to vertebral column and sternum on the two ends.
(3)	X = 24, Y = 7	True ribs are dorsally attached to vertebral column but are free on ventral side.
(4)	X = 24, Y = 12	True ribs are dorsally attached to vertebral column but are free on ventral side

Ans. (1)

10. MALT constitutes about \_\_\_\_\_ percent of the lymphoid tissue in human body.  
 (1) 50% (2) 20% (3) 70% (4) 10%

Ans. (1)

11. Homozygous purelines in cattle can be obtained by:  
 (1) mating of related individuals of same breed. (2) mating of unrelated individuals of same breed.  
 (3) mating of individuals of different breed. (4) mating of individuals of different species.

Ans. (1)

12. Among the following characters, which one was not considered by Mendel in his experiments on pea ?  
 (1) Stem - Tall or Dwarf (2) Trichomes - Glandular or non-glandular  
 (3) Seed - Green or Yellow (4) Pod - Inflated or Constricted

Ans. (2)

13. Which of the following cell organelles is responsible for extracting energy from carbohydrates to form ATP ?  
 (1) Lysosome (2) Ribosome (3) Chloroplast (4) Mitochondrion

Ans. (4)

14. If there are 999 bases in RNA that codes for a protein with 333 amino acids, and the base at position 901 is deleted such that the length of the RNA becomes 998 bases, how many codons will be altered ?  
 (1) 1 (2) 11 (3) 33 (4) 333  
**Ans.** (3)
15. Which of the following are found in extreme saline conditions ?  
 (1) Archaeobacteria (2) Eubacteria (3) Cyanobacteria (4) Mycobacteria  
**Ans.** (1)
16. Receptor sites for neurotransmitters are present on:  
 (1) membranes of synaptic vesicles (2) pre-synaptic membrane  
 (3) tips of axons (4) post-synaptic membrane  
**Ans.** (4)
17. Artificial selection to obtain cows yielding higher milk output represents:  
 (1) stabilizing selection as it stabilizes this character in the population.  
 (2) directional as it pushes the mean of the character in one direction.  
 (3) disruptive as it splits the population into two, one yielding higher output and the other lower output.  
 (4) stabilizing followed by disruptive as it stabilizes the population to produce higher yielding cows.  
**Ans.** (2)
18. The hepatic portal vein drains blood to liver from  
 (1) Heart (2) Stomach (3) Kidneys (4) Intestine  
**Ans.** (4)
19. The water potential of pure water is:  
 (1) Zero (2) Less than zero  
 (3) More than zero but less than one (4) More than one  
**Ans.** (1)
20. Which of the following represents order of 'Horse'?  
 (1) Equidae (2) Perissodactyla (3) Caballus (4) Ferus  
**Ans.** (2)
21. Alexander Von Humbolt described for the first time :  
 (1) Ecological Biodiversity (2) Laws of limiting factor  
 (3) Species are relationship (4) Population Growth equation  
**Ans.** (3)
22. DNA fragments are :  
 (1) Positively charged (2) Negatively charged (3) Neutral  
 (4) Either positively or negatively charged depending on their size  
**Ans.** (2)

23. A baby boy aged two years is admitted to play school and passes through a dental check-up. The dentist observed that boy had twenty teeth. Which teeth were absent ?  
 (1) Incisors (2) Canines (3) Pre-molars (4) Molars  
**Ans.** (3)
24. Anaphase promoting Complex (APC) is a protein degradation machinery necessary for proper mitosis of animal cells. If APC is defective in a human cell, which of the following is expected to occur ?  
 (1) Chromosomes will not condense (2) Chromosomes will be fragmented  
 (3) Chromosomes will not segregate (4) Recombination of chromosome arms will occur  
**Ans.** (3)
25. An important characteristic that hemichordates share with Chordates is  
 (1) Absence of notochord (2) Ventral tubular nerve cord  
 (3) Pharynx with gill slits (4) Pharynx without gill slits  
**Ans.** (3)
26. The genotypes of a Husband and Wife are  $I^A I^B$  and  $I^A i$ .  
 Among the blood types of their children how many different genotypes and phenotypes are possible  
 (1) 3 genotypes ; 3 phenotypes (2) 3 genotypes; 4 phenotypes  
 (3) 4 genotypes ; 3 Phenotypes (4) 4 genotypes ; 4 phenotypes  
**Ans.** (3)
27. Transplantation of tissues / organs fails often due to non-acceptance by the patient's body. Which type of immune response is responsible for such rejection  
 (1) Autoimmune response (2) Cell-mediated immune response  
 (3) Hormonal immune response (4) Physiological immune response  
**Ans.** (2)
28. Adult human RBCs are enucleate. Which of the following statement (s) is / are not most appropriate explanation for this feature?  
 (a) They do not need to reproduce (b) They are somatic cells  
 (c) They do not metabolize (d) All their internal space is available for oxygen transport  
 (1) only (d) (2) Only (a) (3) (a), (c) and (d) (4) (b) and (c)  
**Ans.** (1)
29. Lungs are made up of air-filled sacs, the alveoli. They do not collapse even after forceful expiration because of  
 (1) Residual Volume (2) Inspiratory Reserve Volume  
 (3) Tidal Volume (4) Expiratory Reserve Volume  
**Ans.** (1)
30. Zygotic meiosis is characteristic of  
 (1) Marchantia (2) Fucus (3) Funaria (4) Chlamydomonas  
**Ans.** (4)

- 31.** Select the correct route for the passage of sperms in male frogs  
 (1) Testes → Bidder's canal → Kidney → Vasa efferentia → Urinogenital duct → Cloaca  
 (2) Testes → Vasa efferentia → Kidney → Seminal vesicle → Urinogenital duct → Cloaca  
 (3) Testes → Vasa efferentia → Bidder's canal → Ureter → Cloaca  
 (4) Testes → Vasa efferentia → Kidney → Bidder's canal → Urinogenital duct → Cloaca  
**Ans.** (4)
- 32.** Which one of the following statements is not valid for aerosols  
 (1) They are harmful to human health  
 (2) They alter rainfall and monsoon patterns  
 (3) They cause increased agricultural productivity  
 (4) They have negative impact on agricultural land  
**Ans.** (3)
- 33.** Viroids differ from viruses in having  
 (1) DNA molecules with protein coat (2) DNA molecules without protein coat  
 (3) RNA molecules with protein coat (4) RNA molecules without protein coat  
**Ans.** (4)
- 34.** During DNA replication, Okazaki fragments are used to elongate  
 (1) The leading strand towards replication fork.  
 (2) The lagging strand towards replication fork.  
 (3) The leading strand away from replication fork  
 (4) The lagging strand away from the replication fork  
**Ans.** (4)
- 35.** Plants which produce characteristic Pneumatophores and show vivipary belong to  
 (1) Mesophytes (2) halophytes (3) Psammophytes (4) Hydrophytes  
**Ans.** (2)
- 36.** The process of separation and purification of expressed protein before marketing is called  
 (1) Upstream processing (2) Downstream processing  
 (3) Bioprocessing (4) Postproduction processing  
**Ans.** (2)
- 37.** Identify the wrong statement in context of heartwood  
 (1) Organic compounds are deposited in it  
 (2) It is highly durable  
 (3) It conducts water and minerals efficiently  
 (4) It comprises dead elements with highly lignified walls  
**Ans.** (3)

- 38.** Spliceosomes are not found in cells of  
 (1) Plants                      (2) Fungi                      (3) Animals                      (4) Bacteria  
**Ans.** (4)
- 39.** Which of the following statements is correct  
 (1) The ascending limb of loop of henls is impermeable to to water  
 (2) The descending limb of loop of henle is impermeable to water  
 (3) The ascending limb of loop of Henle is permeable to water  
 (4) The descending limb of loop of Henle is permeable to electrolytes  
**Ans.** (1)
- 40.** Which ecosystem has the maximum biomass  
 (1) Forest ecosystem                      (2) Grassland ecosystem  
 (3) Pond ecosystem                      (4) Lake ecosystem  
**Ans.** (1)
- 41.** The final proof for DNA as the genetic material came from the experiments of  
 (1) Griffith              (2) Hershey and Chase (3) Avery, Mcleod and McCarty (4) hargobind Khorana  
**Ans.** (2)
- 42.** The function of copper ions in copper releasing IUD's is  
 (1) They suppress sperm motility and fertilizing capacity of sperms  
 (2) They inhibit gametogenesis  
 (3) They make uterus unsuitable for implantation  
 (4) They inhibit ovulation  
**Ans.** (1)
- 43.** An example of colonial alga is  
 (1) Chlorella                      (2) Volvox                      (3) Ulothrix                      (4) Spirogyra  
**Ans.** (2)
- 44.** Root hairs develop from the region of :  
 (1) Maturation                      (2) Elongation                      (3) Root cap                      (4) Meristematic acticity  
**Ans.** (1)
- 45.** Hypersecretion of Growth Hormone in adults does not cause further increase in height, because :  
 (1) Growth Hormone becomes inactive in adults.  
 (2) Epiphyseal plates close after adolescence.  
 (3) Bones loose their sensitivity of Growth Hormone in adults.  
 (4) Muscle fibres do not grow in size after birth.  
**Ans.** (2)

46. Which of the following in sewage treatment removes suspended solids ?  
 (1) Tertiary treatment (2) Secondary treatment (3) Primary treatment (4) Sludge treatment  
**Ans.** (3)
47. Select the mismatch :  
 (1) *Pinus* - Dioecious  
 (2) *Cycas* - Dioecuous  
 (3) *Salvinia* - Heterosporous  
 (4) *Equisetum* - Homosporous  
**Ans.** (1)
48. What is the criterion for DNA fragments movement on agarose gel during gel electrophoresis ?  
 (1) The larger the fragment size, the farther it moves  
 (2) The smaller the fragment size, the farther it moves  
 (3) Positive charged fragment moves to farther end.  
 (4) Negatively charged fragments do not move  
**Ans.** (2)
49. In Bougainvillea thorns are the modification of :  
 (1) Stipules (2) Adventitious root (3) Stem (4) Leaf  
**Ans.** (3)
50. The association of histone H1 with a nucleosome indicates :  
 (1) Transcription is occurring (2) DNA replication is occurring  
 (3) The DNA is condensed into a Chromatin Fibre (4) The DNA double helix is exposed.  
**Ans.** (3)
51. A temporary endocrine gland in the human body is :  
 (1) Pineal gland (2) Corpus cardiacum (3) Corpus luteum (4) Corpus allatum  
**Ans.** (3)
52. Select the mismatch :  
 (1) *Frankia* - *Alnus*  
 (2) *Rhodospirillum* - Mycorrhiza  
 (3) *Anabaena* - nitrogen fixer  
 (4) *Rhizobium* - Alfalfa  
**Ans.** (2)



53. GnRH , a hypothalamic hormone, needed in reproduction, acts on :  
 (1) anterior pituitary gland and stimulates secretion of LH and oxytocin.  
 (2) anterior pituitary gland and stimulates secretion of LH and FSH.  
 (3) Poserior pituitary gland and stimulates secretion of oxytocin and FSH.  
 (4) Poserior pituitary gland and stimulates secretion of LH and relaxin.  
**Ans.** (2)
54. A gene whose expression helps to identify transformed cell is known as :  
 (1) Selectable marker (2) Vector (3) plasmid (4) Structural gene  
**Ans.** (1)
55. Presence of plants arranged into well defined vertical layers depending on their height can be seen best in  
 (1) Tropical Savannah (2) Tropical Rain Forest  
 (3) Grassland (4) Temperate Forest  
**Ans.** (2)
56. Functional megaspore in an angiosperm develops into :  
 (1) Ovule (2) Endosperm (3) Embryo sac (4) Embryo  
**Ans.** (3)
57. DNA replication in bacteria occurs :  
 (1) Durings S phase (2) Within nucleolus (3) Prior to fission (4) Just before transcription  
**Ans.** (3)
58. Which among these is the **correct** combination of aquatic mammals ?  
 (1) Seals, Dolphins, Sharks (2) Dolphins, Seals, *Trygon*  
 (3) Whales, Dolphins, Seals (4) *Trygon*, Whales, Seals  
**Ans.** (3)
59. Coconut fruit is a  
 (1) Drupe (2) Berry (3) Nut (4) Capsule  
**Ans.** (1)
60. Double fertilization is exhibited by :  
 (1) Gymnosperms (2) Algae (3) Fungi (4) Angiosperms  
**Ans.** (4)
61. Which of the following components provides sticky character to the bacterial cell ?  
 (1) Cell wall (2) Nuclear membrane (3) plasma membrane (4) Glycocalyx  
**Ans.** (4)

62. Life cycle of *Ectocarpus* and *fucus* respectively are :
- (1) Haplontic, Diplontic (2) Diplontic, Haplodiplontic  
(3) Haplodiplontic, Diplontic (4) Haplodiplontic, Haplontic

Ans. (3)

63. Which one of the following is related to Ex-situ conservation of threatened animals and plants?
- (1) Wildlife Safari parks (2) Biodiversity hot spots  
(3) Amazon rainforest (4) Himalayan region

Ans. (1)

64. Good vision depends on adequate intake of carotene rich food. Select the best option from the following statements.
- (a) Vitamin A derivatives are formed from carotene  
(b) The photopigments are embedded in the membrane discs of the inner segment  
(c) Retinal is a derivative of Vitamin A.  
(d) Retinal is a light absorbing part of all the visual photopigments

Options :

- (1) (a) and (b) (2) (a), (c) and (d) (3) (a) and (c) (4) (b), (c) and (d)
- Ans. (2)

65. Thalassaemia and sickle cell anemia are caused due to a problem in globin molecule synthesis. Select the **correct** statement.
- (1) Both are due to a qualitative defect in globin chain synthesis.  
(2) Both are due to a quantitative defect in globin chain synthesis.  
(3) Thalassaemia is due to less synthesis of globin molecules.  
(4) Sickle cell anemia is due to a quantitative problem of globin molecules

Ans. (3)

66. Which of the following are not polymeric ?
- (1) nucleic acids (2) proteins (3) polysaccharides (4) Lipids

Ans. (4)

67. A disease caused by an autosomal primary non- disjunction is :
- (1) Down's Syndrome (2) klinefelter's Syndrome  
(3) Turner's Syndrome (4) Sickle Cell Anemia

Ans. (1)

- 68.** With reference to factors affecting the rate of photosynthesis, which of the following statements is **not** correct?  
 (1) Light saturation for CO<sub>2</sub> fixation occurs at 10% of full sunlight.  
 (2) Increasing atmospheric CO<sub>2</sub> concentration up to 0.05% can enhance CO<sub>2</sub> fixation rate  
 (3) C<sub>3</sub> plants respond to higher temperatures with enhanced photosynthesis while C<sub>4</sub> plants have much lower temperature optimum.  
 (4) Tomato is a greenhouse crop which can be grown in CO<sub>2</sub> enriched atmosphere for higher yield.  
**Ans.** (3)
- 69.** Fruit and leaf drop at early stages can be prevented by the application of :  
 (1) Cytokinins                      (2) Ethylene                      (3) Auxins                      (4) Gibberellic acid  
**Ans.** (3)
- 70.** The region of Biosphere Reserve which is legally protected and where no human activity is allowed is known as :  
 (1) Core zone                      (2) Buffer zone                      (3) Transition zone                      (4) Restoration zone  
**Ans.** (1)
- 71.** In case of poriferans, the spongocoel is lined with flagellated cells called :  
 (1) ostia                      (2) oscula                      (3) choanocytes                      (4) mesenchymal cells  
**Ans.** (3)
- 72.** A decrease in blood pressure / volume will not cause the release of :  
 (1) Renin                      (2) Atrial natriuretic Factor  
 (3) Aldosterone                      (4) ADH  
**Ans.** (2)
- 73.** A dioecious flowering plant prevents both :  
 (1) Autogamy and xenogamy                      (2) Autogamy and geitonogamy  
 (3) Geitonogamy and xenogamy                      (4) Cleistogamy and xenogamy  
**Ans.** (2)
- 74.** Which of the following facilitates opening of stomatal aperture?  
 (1) Contraction of outer wall of guard cells  
 (2) Decrease in turgidity of guard cells  
 (3) Radial orientation of cellulose microfibrils in the cell wall of guard cells  
 (4) Longitudinal orientation of cellulose microfibrils in the cell wall of guard cells  
**Ans.** (3)
- 75.** The DNA fragments separated on an agarose gel can be visualised after staining with  
 (1) Bromophenol blue                      (2) Acetocarmine                      (3) Aniline blue                      (4) Ethidium bromide  
**Ans.** (4)

- 76.** Which statement is wrong for Krebs's cycle ?  
 (1) there are three points in the cycle where  $\text{NAD}^+$  is reduced to  $\text{NADH}+\text{H}^+$   
 (2) There is one point in the cycle where  $\text{FAD}^+$  is reduced to  $\text{FADH}_2$   
 (3) During conversion of succinyl CoA to succinic acid, a molecule of GTP is synthesised  
 (4) The cycle starts with condensation of acetyl group (acetyl CoA) with pyruvic acid yield citric acid  
**Ans.** (4)
- 77.** Mycorrhizae are the example of  
 (1) Fungistasis (2) Amensalism (3) Antibiosis (4) Mutualism  
**Ans.** (4)
- 78.** The pivot joint between atlas and axis is a type of  
 (1) fibrous joint (2) Cartilaginous joint (3) Synovial joint (4) saddle joint  
**Ans.** (3)
- 79.** Which of the following is correctly matched for the product produced by them?  
 (1) *Acetobacter aceti* : Antibiotics (2) *Methanobacterium* : Lactic acid  
 (3) *Penicillium notatum* : Acetic acid (4) *Sacchromyces cerevsiae* : Ethanol  
**Ans.** (4)
- 80.** Frog's heart when taken out of the body continues to beat for sometime  
 Select the best option from following statements  
 (a) Frog is a poikilotherm. (b) Frog does not have any coronary circulation.  
 (c) Heart is "Myogenic" in nature. (d) heart is autoexcitable.  
 (1) Only (c) (2) Only (d) (3) (a) and (b) (4) (c) and (d)  
**Ans.** (4)
- 81.** Myelin sheath is produced by  
 (1) Schwann cell and Oligodendrocytes (2) Astrocytes and Schwann cells  
 (3) Oligodendrocytes and Osteoclasts (4) Osteoclasts and Astrocytes  
**Ans.** (1)
- 82.** Capacitation occurs in  
 (1) Rete testis (2) Epididymis (3) Vas deferens (4) Female Reproductive tract  
**Ans.** (4)
- 83.** The morphological nature of the edible part of coconut is  
 (1) Perisperm (2) Cotyledon (3) Endosperm (4) Pericarp  
**Ans.** (3)
- 84.** Which of the following is made up of dead cells  
 (1) Xylem parenchyma (2) Collenchyma (3) Phellem (4) Phloem  
**Ans.** (3)

85. In case of a couple where the male is having a very low sperm count, which technique will be suitable for fertilisation

- (1) Intrauterine transfer
- (2) Gamete intracytoplasmic fallopian transfer
- (3) Artificial Insemination
- (4) Intracytoplasmic sperm injection

**Ans.** (3)

86. Which of the following RNAs should be most abundant in animal cell

- (1) r-RNA
- (2) t-RNA
- (3) m-RNA
- (4) mi-RNA

**Ans.** (1)

87. The vascular cambium normally gives rise to

- (1) Phelloderm
- (2) Primary phloem
- (3) Secondary xylem
- (4) Periderm

**Ans.** (3)

88. Which of the following options gives the correct sequences of events during mitosis ?

- (1) Condensation → nuclear membrane disassembly → crossing over → segregation → telophase
- (2) Condensation → nuclear membrane disassembly → arrangement at equator → centromere division → segregation → telophase
- (3) Condensation → crossing over → nuclear membrane disassembly → segregation → telophase
- (4) Condensation → arrangement at equator → centromere division → segregation → telophase

**Ans.** (2)

89. Which of the following option best represents the enzyme composition of pancreatic juice?

- (1) amylase, peptidase, trypsinogen, rennin
- (2) amylase, pepsin, trypsinogen, maltase
- (3) peptidase, amylase, pepsin, rennin
- (4) lipase, amylase, trypsinogen, procarboxypeptidase

**Ans.** (4)

90. Attractants and rewards are required for:

- (1) Anemophily
- (2) Entomophily
- (3) Hydrophily
- (4) Cleistogamy

**Ans.** (2)