

**COMMON ENTRANCE TEST - 2013**  
**QUESTION BOOKLET**  
**BIOLOGY (Code - 03)**

Maximum Time Allowed : 1½ hours  
 Negative Marking : 0.2

No. of Questions : 75  
 Maximum Marks : 75

Roll No. 

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Answer Sheet No. 

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## INSTRUCTIONS

### PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. **Check the booklet thoroughly** : In case of any defect - Misprint, Missing Question(s) or duplication of question(s)/ Page(s) get the booklet changed with the booklet of the same series from the Room Invigilator. No complaint shall be entertained after the entrance test.
2. Write your Roll Number and Answer Sheet No. in the space provided on the Question Booklet and on the OMR Answer Sheet. Incomplete and/or incorrect particulars will result in the non-evaluation of your answer sheet.
3. Strictly follow the instructions given by Centre Supervisor / Room Invigilator and those given on the Question Booklet.
4. Candidates are not allowed to carry any papers, notes, books, calculators, mobile phones, scanning devices etc. in the Examination Hall. Any candidate found using or in possession of such unauthorized material or indulging in copying or impersonation or adopting unfair means / reporting late / without Admit Card will be debarred from the Written Test.
5. Use ONLY blue/black ball point pen for darkening the circles on the OMR Answer Sheet. Use of eraser, whitener (fluid) and cutting on the OMR Answer Sheet is not allowed.
6. The test is of objective type containing multiple choice questions (MCQs). Each objective question is followed by four responses. Choose the correct/best response and mark your response on the OMR Answer Sheet and not in the Question Booklet.
7. Completely darken the CIRCLE so that the number inside the CIRCLE is not visible as shown in the example below.

Correct Method

① ● ③ ④

Wrong Methods

① ② ③ ④ / ① ⊗ ③ ④ / ① ● ③ ④ / ① ● ③ ④ / ① ● ③ ●

8. Darken ONLY ONE CIRCLE for each answer. If you darken more than one circle, it will be treated as a wrong answer.
9. Mark answer only in the space provided. DO NOT make any stray mark anywhere on the OMR Answer Sheet. DO NOT fold or wrinkle the OMR Answer Sheet. Rough work MUST NOT be done on the answer sheet. Use your question booklet for this purpose.
10. Candidates are provided carbonless OMR Answer Sheet (optical mark reader answer sheet) having original copy and candidate's copy. After completing the examination candidates are directed to fold at perforation at the top of sheet, tear it to separate original copy and candidate's copy and then hand over the original copy of OMR Answer Sheet to the Room Invigilator and take candidate's copy with them.

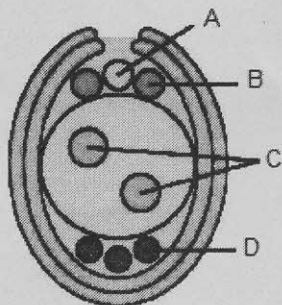
1. Which of the following is the causative organism of influenza ?
  1. Salmonella
  2. Streptococcus
  3. Myxovirus influenzae
  4. Rhinovirus
2. Addiction of LSD leads to
  1. hallucination
  2. damage to kidneys
  3. damage to lungs
  4. mental and emotional disturbances
3. A disease sometimes found in persons above 40 years of age and is characterised by poor CNS coordination, forgetfulness and tremor of hands is
  1. epilepsy
  2. alzheimer's disease
  3. migraine
  4. schizophrenia
4. Which of the following is an auto-immune disease ?
  1. AIDS
  2. Haemophilia
  3. Allergy
  4. Rheumatoid arthritis
5. Taxon is the unit of
  1. species
  2. order
  3. genus
  4. taxonomy
6. A virus can be considered a living organism because it
  1. respire
  2. responds to touch stimuli
  3. can cause disease
  4. reproduces (inside the host)
7. The basic unit or the lowest taxonomic category is
  1. species
  2. family
  3. order
  4. kingdom
8. The excretory organ of cockroach and other insects are
  1. nephridia
  2. gizzard
  3. flame cells
  4. malpighian tubules
9. The clitellum of pheretima is present in segments
  1. 12, 13 & 14
  2. 13, 14 & 15
  3. 14, 15 & 16
  4. 15, 16 & 17
10. Which of the following is a loose connective tissue?
  1. Adipose tissue
  2. Areolar tissue
  3. Blood
  4. Nervous tissue
11. Where does the synthesis of ATP in mitochondria takes place ?
  1. In matrix
  2. In intercrystal space
  3. Upon cristae
  4. At outer membrane
12. Golgi Apparatus is specialised for
  1. energy transduction
  2. digestion of protein
  3. Glycosidation of proteins and lipids
  4. digestion of carbohydrates
13. Exchange of paternal and maternal chromosomes material during cell division is called
  1. Dyad formation
  2. Bivalent formation
  3. Synapsis
  4. Crossing over
14. In mitosis, where does the chromosome duplication occur ?
  1. Interphase
  2. Prophase
  3. Late prophase
  4. Late telophase
15. Linoleic acid is an unsaturated fatty acid and its content is highest in
  1. coconut oil
  2. sunflower oil
  3. groundnut oil
  4. cotton oil
16. The product of an enzyme-catalysed reaction can act as an inhibitor of the reaction. This mechanism of control is known as
  1. feed back inhibition
  2. competitive inhibition
  3. repression
  4. non-competitive inhibition
17. The respiratory centre in brain is stimulated by
  1. CO<sub>2</sub> concentration in venous blood
  2. O<sub>2</sub> concentration in venous blood
  3. O<sub>2</sub> concentration in arterial blood
  4. CO<sub>2</sub> concentration in arterial blood
18. Glucose present in glomerular filtrate is reabsorbed in
  1. Bowman's capsule
  2. Henle's loop
  3. proximal convoluted tubule
  4. distal convoluted tubule
19. Which is the largest bone in middle ear ?
  1. Incus
  2. Malleus
  3. Stapes
  4. Cochlea

20. Which of the following activities is disturbed, if parathyroid gland degenerates ?
  1. Growth
  2. Sodium concentration
  3. Potassium concentration
  4. Calcium concentration
21. Retina is composed of
  1. rods only
  2. cones only
  3. rods and cones
  4. rods, cones and neuroganglion cells
22. Which of the following vertebrate organs receives only oxygenated blood ?
  1. Gill
  2. Lung
  3. Liver
  4. Spleen
23. Which of the following is agranulocyte ?
  1. Lymphocyte
  2. Eosinophill
  3. Basophill
  4. Neutrophil
24. The rate of heart beat is determined by
  1. SA node
  2. AV node
  3. Purkinjee fibre
  4. Papillary muscles
25. The middle piece of the sperm contains
  1. centriole
  2. nucleus
  3. protein
  4. mitochondria
26. Secretion of progesterone by corpus Luteum is initiated by
  1. Gh
  2. LH
  3. thyroxine
  4. testosterone
27. The function of oxytocin is to help in
  1. child birth
  2. growth
  3. lactation
  4. gametogenesis
28. Human gametes differ from all other body cells as they are
  1. motile
  2. diploid
  3. haploid
  4. without cell wall
29. Which one of the following is initiated by secretion of trophoblast ?
  1. Blastulation
  2. Gastrulation
  3. Implantation
  4. Cleavage
30. Spermatogenesis changes
  1. spermatogonium to primary spermatocyte
  2. primary spermatocyte to secondary spermatocyte
  3. secondary spermatocyte to spermatid
  4. spermatid to spermatozoa
31. Which of the following is a hormone releasing IUD ?
  1. Multiload 375
  2. Cu 7
  3. LNG-20
  4. Cu T
32. Plasmids present in the bacterial cells are
  1. linear double helical RNA molecules
  2. linear double helical DNA molecules
  3. circular double helical DNA molecules
  4. circular double helical RNA molecules
33. In which of the following diseases, the man has an extra X-chromosome ?
  1. Bleeder's disease
  2. Turner's syndrome
  3. Down's syndrome
  4. Klinefelter's syndrome
34. Which of the following takes place in DNA fingerprinting ?
  1. A positive identification can be made
  2. Multiple restriction enzyme digests/generates unique fragments
  3. The polymerase chain reaction amplifies fewer DNA
  4. The variability of repeated sequences between two restriction sites is evaluated
35. The scientist related with the theory of biogenesis and who has done experiment with swan-necked flask is
  1. Haeckel
  2. Louis Pasteur
  3. van Helmont
  4. Miller
36. A plant hormone used for inducing morphogenesis in plant tissue culture is
  1. ABA
  2. gibberellins
  3. cytokinins
  4. ethylene
37. Triticale is obtained by crossing wheat with
  1. oat
  2. maize
  3. barley
  4. rye
38. A bio-fertiliser is
  1. a cyanobacteria like anabaena species living in cavities of azolla leaves
  2. symbiotic association like azotobacter which fixes atmospheric nitrogen
  3. farm yard manure consisting of mixture of cattle dung and crop
  4. green manure in which a quickly growing crop is cultivated and ploughed under



39. Unicellular algae, diatoms and protozoans are the members of  
 1. Monera                      2. fungi  
 3. Protista                    4. plantae
40. Which of the following is also known as 'amphibian of the plant kingdom' ?  
 1. Algae  
 2. Bryophytes  
 3. Pteridophytes  
 4. Gymnosperms
41. Yeast is **not** included in protozoas but in fungi because  
 1. chlorophyll is absent  
 2. it has eukaryotic organisation  
 3. cell wall is made up of cellulose and reserve food material as starch  
 4. some fungal hyphae grow in such a way that they give the appearance of pseudomycelium
42. An association between roots of higher plants and fungi is called  
 1. lichen                      2. fern  
 3. mycorrhiza                4. none of these
43. The arrangement of vascular bundles in dicot roots are  
 1. conjoint                    2. collateral  
 3. radial                      4. bicollateral
44. An inflorescence with a single central achlamydeous female flower surrounded by a member of achlamydeous male flower is  
 1. cyathium                    2. hypanthodium  
 3. spadix                      4. verticillaster
45. Cladode is a modification of  
 1. stem                        2. root  
 3. leaf                         4. petiole
46. Movement of water through semipermeable membrane produces  
 1. wall pressure  
 2. turgor pressure  
 3. suction pressure  
 4. osmotic pressure
47. Rate of transpiration is measured by which of the following apparatus ?  
 1. Porometer  
 2. Respirometer  
 3. Ganong's potometer  
 4. Auxanometer
48. Which of the following is the site for glycolysis or EMP ?  
 1. Mitochondria  
 2. Cytoplasm  
 3. Nucleus  
 4. Chloroplast
49. In  $C_4$  plants, chloroplast also occurs in  
 1. epidermis  
 2. guard cells  
 3. spongy parenchyma  
 4. bundle sheath cells
50. Quantasomes occur on the surface of  
 1. cristae  
 2. thylakoids  
 3. plasmalemma  
 4. nuclear envelope
51. Which is the direction of food through the phloem ?  
 1. From below upward  
 2. From tip to bottom  
 3. From leaves to roots  
 4. From roots to stem
52. Plant cooling is due to  
 1. assimilation  
 2. guttation  
 3. photorespiration  
 4. transpiration
53. In short day plants, flowering is inhibited by interruption of dark by  
 1. white or red light  
 2. far-red light  
 3. red light followed by far-red light  
 4. far red light, then red light and again by far red light
54. In angiosperms, triple fusion is required for  
 1. embryo                      2. endosperm  
 3. suspensor                  4. fruit wall
55. Which of the following is the function of tapetum ?  
 1. Respiratory  
 2. Nutritive  
 3. Reproductive  
 4. Protective
56. Which of the following presents premature fall of fruit?  
 1.  $GA_3$                         2. Zeatin  
 3. NAA                        4. Ethylene
57. Which part of the plant shows thigmotropism ?  
 1. Leaf lamina                2. Tendrils  
 3. Root apex                 4. Thorns

58. Given below is the diagram of a embryo sac. Choose the option in which all the four parts A, B, C and D are correctly identified



1. A - synergids, B - antipodal cells, C - egg cell, D - polar nuclei
  2. A - egg cell, B - synergids, C - polar nuclei, D - antipodal cells
  3. A - egg cell, B - polar nuclei, C - synergids, D - antipodal cells
  4. A - antipodal cells, B - egg cell, C - polar nuclei, D - synergids
59. Which of the following pairs of bacteria are generally used in genetic engineering experiments ?
1. Nitrosomonas and azotobacter
  2. Klebsiella and rhizobium
  3. Escherichia and agrobacterium
  4. Diplococcus and Nitrosomonas
60. If a heterozygous tall plant is crossed with a homozygous dwarf plant, the proportion of dwarf progeny will be
1. 25%
  2. 50%
  3. 75%
  4. 100%
61. The process that involves the transfer of genetic material from one bacterium to another through the agency of bacteriophage is
1. transformation
  2. transcription
  3. transduction
  4. translocation
62. Genes that are involved in turning on or off the transcription of a set of structural genes are called
1. polymorphic genes
  2. operator genes
  3. repressor genes
  4. regulatory genes
63. Which of the following enzymes cleaves DNA at specific sites producing sticky end ?
1. Lyases
  2. Proteases
  3. Restriction endonuclease
  4. Cleaving enzyme
64. A man, whose father is colour blind, marries a lady who is daughter of a colour blind man. Their offsprings will be
1. all normal
  2. all colour blind
  3. all sons colour blind
  4. some sons colour blind and some normal
65. A sedentary sea anemone gets attached to the shell lining of hermit crab. The association is called
1. symbiosis
  2. commensalism
  3. parasitism
  4. ectoparasitism
66. Pseudomonas is an important component of nitrogen cycle. It
1. fixes elemental nitrogen
  2. produces elemental nitrogen
  3. transfers elemental nitrogen
  4. changes ammonium nitrogen to nitrate state
67. Biochemical oxygen demand measures
1. air pollution
  2. industrial pollution
  3. pollution capacity of effluents
  4. dissolved oxygen needed by microbes to decompost wastes
68. The most common indicator organism which represents polluted water is
1. S. typhi
  2. Vibrio cholerae
  3. E. coli
  4. Entamoeba histolytica
69. Submerged hydrophytes have a well developed
1. root system
  2. aerenchyma
  3. stomata
  4. vascular system
70. Dominant species represents most abundant
1. first tree
  2. shrub that appears for the first time
  3. herb that binds the soil and provides organic matter to it
  4. species having major effect on physical environment
71. The mammals (animals) from colder climates generally have shorter hair and not fully developed ear, eyes and other phenotypic characters. This is known as
1. Dalls' law
  2. Allen's rule
  3. Cope's law
  4. Bergmann's law

72. Which of the following recent technique is used for separating fragments of DNA ?
1. Eastern blotting
  2. Northern blotting
  3. Southern blotting
  4. Western blotting
73. In case of *Bacillus thuringiensis*, *Bacillus* itself is **not** killed by the toxic protein crystals produced by it because Bt. toxin
1. protein is not produced in the *Bacillus*
  2. cannot cause any damage to *Bacillus*
  3. protein is produced in very less amount in the *Bacillus*
  4. exist as the inactive toxin
74. Which one of the following drugs depresses (switch off) the activities of central nervous system, is known as sedative and also gives feeling of calmness, relaxation or drowsiness ?
1. Opium
  2. Barbiturate
  3. Heroin
  4. Cocaine
75. Which of the following techniques is used to make numerous copies of a specific segment of DNA quickly and accurately ?
1. Translation
  2. Transcription
  3. Polymerase chain reaction
  4. Ligase chain reaction