

Biology

1. Cycas have two cotyledons but not included in angiosperms because of
 1. circinate venation
 2. naked ovules
 3. compound leaves
 4. both 1 and 2

2. Give the term used for an organism with two unlike genes of a trait
 1. heterozygous
 2. homozygous
 3. Genotype
 4. none of these

3. What type of antibody will a person of 'AB' blood group have?
 1. A
 2. B
 3. B and A
 4. None of the above

4. Match the names of class given in column I with their common names listed in column II

Choose the correct answer which gives correct combination of alphabets.

Column I		Column II	
A	Cyanophyceae	P	Green algae
B	Chlorophyceae	Q	Red algae
C	Phaeophyceae	R	Golden brown algae
D	Rhodophyceae	S	Blue green algae
		T	Brown algae

1. A = t; B = s; C = p; D = q
 2. A=S; B = p;C = q; D = t
 3. A = S; B = p; C = t; D = q
 4. A= p; B = q; C =r; D=s
5. "Waterbloom" is caused by
 1. Gracillaria
 2. Chlorella
 3. Microcystis
 4. Nostoc

6. The movement of cytoplasm in the cell is termed as

1. Cyclosis
2. Endocytosis
3. Cytokinesis
4. Brownian movement

7. Match the following and mark the correct option

Column I	Column II
A. Fast muscle fibres	i. Myoglobin
B. Slow muscle fibres	ii. Lactic acid
C. Actin filament	iii. contractile unit
D. Sarcomere	iv. I band

1. A-i, B-ii, C-iv, D-iii
2. A-ii, B-i, C-iii, D-iv
3. A-ii, B-ii, C-i, D- iv
4. A-ii, B-iv, C-ii, D- i

8. XO is the Karyotype of

1. male with Down's syndrome
2. male with Turner's syndrome
3. female with turner's syndrome
4. female with down's syndrome

9. mRNA and tRNA are synthesized in the

1. nucleus
2. mitochondria
3. chloroplasts
4. ribosomes

10. Which of these bio reserve zone are completely protected from human activity ?

1. Core zone
2. Buffer zone - 1
3. Buffer zone - 2
4. Intrinsic zone

11. Patent system

1. hinders progress in science and medicine
2. increases progress in science and medicine
3. does not have any effect
4. none of these

12. The first transgenic crop produced was

1. Flax
2. Pea
3. tobacco
4. cotton

13. What does CFC's contain?

1. Chlorine
2. Fluorine and cyanide
3. Chlorine and fluorine
4. Carbon monoxide

14. The term homeostasis is coined by

1. Claude Bernard
2. Banting
3. Walter Cannon
4. Wiener

15. The law of limiting factors is based on a concept earlier given by

1. Liebig
2. Sachs
3. Robert Hill
4. Daniel Arnon

16. Match the items given in column I with those listed in column II; choose the answer which gives correct combination of alphabets

Column I	Column II
A Chemical knives	p. Hybrid cells resulting from myeloma cells and B lymphocytes
B Interferons	q. endonucleases
C Autopolyploid	r. Useful in controlling cancer
D Hybridoma	s. Plants having similar genotype
	t. Karyotype examination

1. A-q; B=r; C-s; D =p
2. A=p; B=r; C=s; D-q
3. A-P; B=s; C-r; D=q
4. A-t; B-s; C=r; D-p

17. Which one of the following is not true regarding NK cells?

1. Anti-viral
2. Anti-bacterial
3. Presence of certain glyco proteins on their surface
4. Can kill a range of tumous cells

18. Three inverted funnel Hydrilla experiments namely A, B and C are conducted. The set up A is covered with an opaque box, set up B is set by adding pinch of NaHCO_3 and set up C by adding lime water. The volume of O_2 evolved under different conditions is compared. Select the correct answer in the following

1. set up A shows comparatively lower rate of photosynthesis and evolution of O_2 increased
2. set up B shows higher rate of photosynthesis and evolution of O_2
3. set up C does not show photosynthesis and evolution of O_2
4. set up A, B and C show little photosynthesis and evolution of O_2

19. During vaccination small amounts of..... are injected into the body.

1. antigens
2. antiserum
3. antibiotics
4. antibodies

20. Hapten is

1. an incomplete antigen
2. reacts with antibodies
3. requires a carrier for an immune response
4. all of the above

21. Which of these papillae are gustatory in function?

1. Circumvallate
2. Fungiform
3. Both of the above
4. None of the above

22. The aleurone layer in maize grain is rich in

1. proteins
2. starch
3. auxins
4. lipids

23. The scutellum of the monocot embryo is/an

1. vestigial organ
2. photosynthetic organ
3. absorptive organ
4. reserve food storage organ

24. Pseudorumination is otherwise called

1. cud chewing
2. deglutition
3. eating its own faeces
4. ensalivation

25. Match the following.

a	NK cells	p	Macrophage
b	Monocytes	q	Microphage
c	Neutrophils	r	Perforin
d	B-lymphocytes	s	Plasma cells
		t	Interferon

1. a-p:b=q:c=r:d=t
2. a=r;b=p:c=q; d = s
3. a= s: b- q:c=r:d=t
4. a=s;b=q:c=p: d =t

26. In the absence of calcium ions

1. blood clots
2. blood does not clot
3. no change in blood
4. none of the above

27. The alveolar duct dialates into

1. infundibulum
2. alveoli
3. air sacs
4. air cavity

28. Gametophytic generation in ferns is

1. prothallus
2. zygote
3. antheridium
4. antherozoid

29. Bronchiogenic carcinoma in the cancer of the lung. The cells which undergo uncontrolled division are

1. epithelial cells of bronchioles
2. epithelial cells of alveoli
3. epithelial cells of nasal passage
4. epithelial cells of respiratory tract

30. The net filtration pressure responsible for ultrafiltration is

1. 75 mm Hg
2. 25 mm Hg
3. 30 mm Hg
4. 20 mm Hg

31. Which one of the following exhibits ureotelism?

1. Amphibians
2. Reptiles, amphibians
3. Amphibians, mammals
4. None of these

32. Durameter is the outermost tough membrane attached to

1. the pericardium of the heart
2. the periosteum of skull
3. the pleura of lungs
4. none of the above

33. Neurological disorder characterized by degeneration of nerve fibres is

1. focal epilepsy
2. Parkinson's disease
3. epilepsy
4. Huntington's chorea

34. Excess of alcohol causes

1. inflammation of kidney
2. liver cirrhosis
3. goitre
4. arthritis

35. The path taken by zygotic nucleus for division is known as

1. copulation path
2. penetration path
3. cleavage path
4. none of these

36. Central Rice Research Institute (CRRI) is situated at

1. Coimbatore
2. Trivandrum
3. Trichinapalli
4. Cuttack

37. Germinal vesicle in frog's egg is restricted to

1. animal hemisphere
2. vegetal hemisphere
3. equatorial region
4. both 1 and 2

38. In mass sterilization of males, which of the following method is employed?

1. Condoms
2. Tubectomy
3. Vasectomy
4. Implants

39. The role of DNA ligase in the construction of a recombinant DNA molecule is

1. Ligation of all purine and pyrimidine bases
2. Formation of hydrogen bonds between sticky ends of DNA fragments
3. Formation of phosphodiester bond between two DNA fragments
4. None of these

40. Population density of terrestrial organisms is measured in terms of individual per

1. meter
2. meter²
3. meter³
4. meter⁴

41. Who called crown galls as plant cancer?

1. Erwin F. Smith
2. John Ray
3. H.H. Whetzel
4. A.F.W. Schimper

42. Common commercial fruit ripener used in horticulture is

1. Ethylene
2. Ethephon
3. Methane
4. None of the above

43. Shedding of endometrial lining causes

1. ovulation
2. fertilization
3. placentation
4. mensuration

44. Mark among the following a cell which does not exhibit phagocytotic activity

1. Macrophage
2. Basophil
3. Neutrophil
4. Monocytes

45. The growth of xylem in stems from the centre towards outwards is

1. Centripetal
2. centrifugal
3. acropetal
4. basipetal

46. The stain haematoxylin is extracted from the heart wood of

1. log wood
2. rosewood
3. Indian rose
4. teak wood

47. Given below are a few statements related to external fertilization.

Choose the correct statements.

- I. Only a few gametes are released into the medium
 - II. The male and female gametes are formed and released simultaneously
 - III. Offspring formed as a result of external fertilization have better chance of survival than those formed inside an organism
 - IV. Water is the medium in a majority of organisms exhibiting external fertilization
1. iii and iv
 2. i and ii
 3. ii and iv
 4. i and iv

48. Which one of the following is not a carbohydrate

1. Glycogen
2. Cellulose
3. Chitin
4. Keratin

49. Name the type of symmetry exhibited by cnidarians.

1. Radial symmetry
2. Bilateral
3. Asymmetrical
4. All of these

50. Meselson and Stahl's experiment is continued for four generations in bacteria, the ratio of $^{15}\text{N}/^{15}\text{N}$: $^{15}\text{N}/^{14}\text{N}$: $^{14}\text{N}/^{14}\text{N}$, containing DNA in the fourth generation would be

1. 1:1:0
2. 1:4:0
3. 0:1:3
4. 0:1:7

51. Poorly aerated soil retards absorption of water because

1. soil water becomes hypertonic
2. accumulation CO_2 around the roots increases the viscosity of the protoplasm
3. it causes decreased permeability of the roots to water
4. both 2 and 3

52. Extremely intense light retards the rate of photosynthesis. It is due to

1. photooxidation of cellular components
2. photoreduction of cellular components
3. photoionization of water
4. deactivation of enzymes

53. Seminal plasma, the fluid part of semen, is contributed by

(i) Seminal vesicle

(ii) Urethra

(Lit) Prostate

(iv) Bulbourethral gland

1. i and ii
2. i, ii and iv
3. ii, iii and iv
4. i and iv

54. Which of the following does not evolve oxygen?

1. Green algae
2. Blue green algae
3. Autotrophic plants
4. Photosynthetic bacteria

55. The most accepted line of descent in human evolution is

1. Ramapithecus → Homo habilis → Homo erectus → Homo sapiens
2. Homo erectus → Homo habilis → Homo sapiens
3. Australopithecus → Ramapithecus → Homo sapiens → Homo habilis
4. Australopithecus → Ramapithecus → Homo erectus → Homo habilis → Homo sapiens.

56. Snow blindness is caused due to

1. Global warming
2. Greenhouse effect
3. Ozone depletion
4. Bio magnification

57. When pollen grain is shed at three cell stage, name the cell it contains

- a) 1 vegetative cell and 2 male gametes
- b) 2 vegetative cell and 1 male gamete
- c) 2 generative cells and 1 male gamete
- d) 2 male gametes and 1 generative cells

58. Which of the following nitrogen bases is found only in DNA

- a) Guanine
- b) Thymine
- c) Adenine
- d) Cytosine

59. Name the pale yellow coloured, transparent coelomic fluid obtained from earthworms.

1. Lymph
2. Vermiwash
3. Vernicin
4. Fibrocin

60. Pollination by ants is called

1. anemophily
2. malacophily
3. myrmicophily
4. entomophily