

1. Which of the following correctly describes the role of cAMP and the hormones employing it?
1. binding site; nonsteroid
  2. membrane receptor; steroid
  3. activity site; G protein
  4. second messenger; nonsteroid
2. Oxytocin and ADH are synthesized:
1. in neurosecretory cells that originate in the hypothalamus
  2. in the posterior pituitary
  3. in the hypothalamic-hypophyseal portal system
  4. in the pineal
3. Select the answer which correctly matches the endocrine gland with the hormone it secretes and its function/deficiency symptom
- | Endocrine gland        | Hormone             | Function/deficiency symptoms                     |
|------------------------|---------------------|--|
| 1. Anterior pituitary  | Oxytocin            | Stimulates uterus contraction during child birth |
| 2. Posterior pituitary | Growth Hormone (GH) | Oversecretion stimulates abnormal growth         |
| 3. Thyroid gland       | Thyroxine           | Lack of iodine                                   |
| 4. Corpus Lutum        | Testosterone        | Stimulates spermatogenesis                       |
4. A condition where the arteries become narrowed and hardened due to a buildup of plaque around the artery wall is called as:
1. arteriosclerosis
  2. phlebitis
  3. atherosclerosis
  4. plaque
5. During the cardiac cycle the tricuspid and bicuspid valves get closed when:
1. when pressure inside the ventricles is at its lowest
  2. when pressure inside the atria is greater than that inside the ventricles
  3. when ventricular pressure exceeds that of the atria
  4. when pressure is greater in the aorta than in the left ventricle
6. A large bone marrow cell with a lobated nucleus responsible for the production of blood thrombocytes is:
1. progranulocyte
  2. basophilic band cell
  3. monoblast
  4. megakaryoblast
7. The least significant factor for erythropoiesis amongst the following is:
1. vitamin B12
  2. vitamin B6
  3. folic acid
  4. gastric intrinsic factor
8. The deficiency of cyanocobalamin or vitamin B12 causes:
1. aplastic anemia
  2. pernicious anemia
  3. hemolytic anemia
  4. hemorrhagic anemia
9. All the following statements regarding hemoglobin are true except:
1. Hemoglobin loads up with oxygen in the alveolar capillaries.
  2. Approximately 97% of hemoglobin in red blood cells is in the form of oxyhemoglobin.
  3. Hemoglobin has a lower affinity for oxygen at higher temperatures.
  4. Each molecule of hemoglobin can carry one molecule of oxygen.
10. The most efficient respiratory system amongst the following would be:
1. mammal lungs
  2. reptile lungs
  3. bird lungs
  4. fish gills
11. The division of the circulatory system involved in the exchange of gases between interstitial fluid and the blood are:
1. arteries
  2. arterioles
  3. capillaries
  4. venules
12. Dyspnea in an asthmatic patient is due to the constriction of the
1. trachea.
  2. larynx.
  3. terminal bronchioles.
  4. alveoli.
13. A hormone formed in the blood that causes vasoconstriction is:
1. Renin
  2. Aldosterone
  3. Angiotensin

4. Vasopressin
14. The collecting ducts become permeable to water and urea due to:  
1. Aldosterone  
2. Atrial natriuretic peptide  
3. Renin  
4. ADH (vasopressin)
15. The urine examination of a person suspected of a kidney disorder is most likely to show the presence of:  
1. Urea  
2. Potassium  
3. Albumins  
4. Glucose
16. Intracellular fluid:  
1. has a lower concentration of potassium than extracellular fluid.  
2. has a lower concentration of sodium ions than extracellular fluid.  
3. does not remain in osmotic equilibrium.  
4. has a higher concentration of calcium ions than extracellular fluid.
17. Which one of the following statements is correct with respect to salt water balance inside the body of living organisms?  
1. When water is not available camels do not produce urine but store urea in tissues.  
2. Salmon fish excretes lot of stored salt through gill membrane when in fresh water.  
3. Paramecium discharges concentrated salt solution by contractile vacuoles.  
4. The body fluids of fresh water animals are generally hypotonic to surrounding water.
18. A malfunction of the corpora quadrigemina would affect:  
1. vision and hearing  
2. thermoregulation and osmoregulation  
3. olfaction and taste  
4. sleep and wakefulness
19. An injury to the cerebellum would most probably lead to:  
1. hyperphagia  
2. coma  
3. aphasia  
4. ataxia
20. The purplish red pigment rhodopsin contained in the rods type of photoreceptor cells of the human eyes is a derivative of  
1. vitamin-C  
2. vitamin-D  
3. vitamin-A  
4. vitamin-B
21. Which layer in the wall of the gastrointestinal tract has an inner circular and outer longitudinal layer?  
1. lamina propria  
2. muscularis mucosa  
3. submucosa  
4. muscularis
22. What prevents GER [gastro-esophageal reflux]?  
1. lower esophageal sphincter  
2. sphincter of Oddi  
3. esophageal hiatus  
4. glottis
23. A column-shaped cell found in the respiratory and intestinal tracts, which secretes the main component of mucus, is the:  
1. G cell  
2. enterochromaffin-like cell  
3. parietal cell  
4. goblet cell
24. The part of the small intestine that has maximum length is the:  
1. duodenum  
2. jejunum  
3. ileum  
4. colon
25. Blastocyst gets implanted on the:  
1. myometrium  
2. perimetrium  
3. endometrium  
4. wall of the oviduct
26. If for some reason our goblet cells are non-functional, this will adversely affect.  
1. production of somatostatin  
2. secretion of sebum From the sebaceous glands  
3. maturation of sperms  
4. smooth movement of food down the intestine
27. What is vital capacity of our lungs?  
1. Inspiratory reserve volume plus tidal volume  
2. Total lung capacity minus expiratory reserve volume  
3. Inspiratory reserve volume plus expiratory reserve volume  
4. Total lung capacity minus residual volume
28. There are 8 and 7 bones respectively in:  
1. tarsal [ankle] and carpal [wrist]  
2. carpal[wrist] and tarsal[ankle]  
3. neurocranium and facial skeleton  
4. facial skeleton and neurocranium
29. A muscle fasciculus is surrounded by:  
1. perimysium.  
2. endomysium.  
3. epimysium

4. hypomysium.

30.

The correct statement regarding myofibril would be:

1. It is the name for a muscle cell.
2. It contains sarcoplasmic reticulum.
3. It is made up of many sarcomeres.
4. It is a bundle of muscle cells.

31.

Myosin myofilaments are

1. made up of thick and thin myofilaments.
2. found only in the H zone.
3. not seen in the H zone.
4. attached to filaments that form the M line.

32.

Which of the following cells during gametogenesis is normally diploid?

1. Primary polar body
2. Spermatid
3. Spermatogonia
4. Secondary polar body

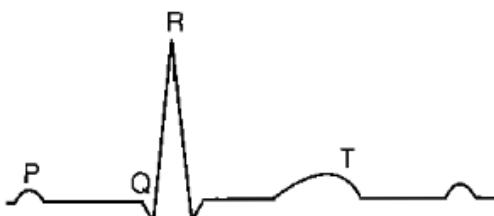
33.

Oral contraceptive pills do not:

1. Inhibit ovulation
2. Prevent implantation
3. Alter cervical mucus
4. Kill sperms

34.

The diagram given here is the standard ECG of a normal person. the P-wave represents the



1. contraction of both the atria
2. initiation of the ventricular contraction
3. beginning of the systole
4. end of systole

35.

If turgor pressure becomes equal to the wall pressure, then

- (a) water leaves the cell
- (b) water enters the cell
- (c) no exchange of water takes place
- (d) solute goes from the cell into water.

36.

Which of the following cannot be detected in a developing foetus by amniocentesis?

1. Klinefelter syndrome
2. Sex of the foetus
3. Down's syndrome
4. Jaundice

37.

Which one of the following item gives its correct total number?

1. Floating ribs in humans - 4
2. Amino acids found in proteins - 16
3. Types of diabetes - 3
4. Cervical vertebrae in humans - 8

38.

An analysis of xylem exudates will show that most of the nitrogen is carried as:

1. Inorganic ions
2. Ammonia dissolved in water
3. Dinitrogen
4. Organic compounds such as amino acids

39.

Phloem sap is mainly:

1. Glucose and Water
2. Hormones and Amino acids
3. Water and Sucrose
4. Amino acids and water

40.

Farmers in a particular region were concerned that pre-mature yellowing of leaves of a pulse crop might cause decrease in the yield. Which treatment could be most beneficial to obtain maximum seed yield?

1. Frequent irrigation of the crop
2. Treatment of the plants with cytokinins alongwith a small dose of nitrogenous fertilizer
3. Removal of all yellow leaves and spraying the remaining green leaves with 2, 4, 5 trichlorophenoxy acetic acid
4. Application of iron and magnesium to promote synthesis of chlorophyll

41.

Name the amino acid from which 17 other amino acids are formed by transamination in plants?

1. Glycine
2. Lysine
3. Tryptophan
4. Glutamic acid

42.

The C<sub>4</sub> -plants are photosynthetically more efficient than C<sub>3</sub> - plants because

- (1) the CO<sub>2</sub> compensation point is more
- (2) CO<sub>2</sub> generated during photorespiration is trapped and recycled through PEP carboxylase
- (3) the CO<sub>2</sub> efflux is not prevented
- (4) they have more chloroplasts.

43.

This is based on the Table 13.1 in NCERT. Identify the correctly matched rows:

		C <sub>3</sub>	C <sub>4</sub>
I.	Productivity	Low	High
II.	CO <sub>2</sub> compensation point	Low	Low
III.	Temperature optimum	20 – 25° C	30 – 45° C

1. Only I and II  
 2. Only I and III  
 3. Only II and III  
 4. I, II and III

44.

How many ATP molecules could maximally be generated from one molecule of glucose, if the complete oxidation of one mole of glucose to CO<sub>2</sub> and H<sub>2</sub>O yields 686 kcal and the useful chemical energy available in the high energy phosphate bond of one mole of ATP is 12 Kcal?

1. Two  
 2. Thirty  
 3. Fifty seven  
 4. One

45.

If fatty acids were to enter the respiratory pathway, they must be converted to molecule with:

1. Two carbon  
 2. Three carbon  
 3. Five carbon  
 4. Six carbon

46.

Which one of the following acids is a derivative of carotenoids?

1. Indole-butyric acid  
 2. Indole-3-acetic acid  
 3. Gibberellic acid  
 4. Abscisic acid

47.

Niche overlap indicates

1. active cooperation between two species.  
 2. two different parasites on the same host.  
 3. sharing resources between two species  
 4. mutualism between two species.

48.

Unlike population, an individual has:

1. Birth and death  
 2. Birth rate  
 3. Death rate  
 4. Sex ratio

49.

If in a pond there are 20 lotus plants last year

and through reproduction 4 new lotus plants are added, the number of offspring per lotus per year would be:

1. 0.2  
 2. 0.4

3. 2.0  
 4. 4.0

50.

The given age pyramid represents a:



1. Fast expanding population  
 2. Slowly expanding population  
 3. Stable population  
 4. Declining population

51.

Which one of the following is one of the characteristics of a biological community. (AIPMT 2010)

1. Natality  
 2. Mortality  
 3. Sex-ratio  
 4. Stratification

52.

In which of the following instances would an ecological succession regarded as secondary?

1. Newly cooled lava  
 2. Bare rock  
 3. Newly created pond  
 4. Abandoned farmland

53.

Identify the correct statements regarding ecological succession:

- I. Secondary succession is faster than the primary succession usually  
 II. Ecological succession involves a change over time in vegetation only  
 III. Natural or human disturbance can convert a particular seral stage of succession to an earlier stage  
 1. Only I and II  
 2. Only I and III  
 3. Only II and III  
 4. I, II and III

54.

Biodiversity of a geographical region represents (AIPMT mains-2011)

1. Endangered species found in the region.  
 2. The diversity in the organisms living in the region.  
 3. Genetic diversity present in the dominant species of the region.  
 4. Species endemic to the region.

55.

Which of the following is a source of an antimalarial drug?

1. Papaver somniferum
2. Cinchona officinalis
3. Artemesia species
4. Both 2 and 3

56.

The bark of the yew tree, Taxus brevifolia, is source of:

1. an antileprosy drug
2. an anticancer drug
3. a broad spectrum antibiotic
4. an analgesic and sedative

57.

A plant, that has invaded many forest lands in India and is also known as Spanish Flag or Red sage, is:

1. Lantana camara
2. Eichornia
3. Parthenium argentatum
4. Argemone mexicana

58.

Which is not a bio indicator of water pollution (AIPMT 2007)

1. Blood worms
2. Stone flies
3. Sewage fungus
4. Sludge worms.

59.

Brown air consists of:

1. Sulphur dioxide
2. Nitrogen oxides
3. Carbon dioxide
4. Ozone

60.

Photochemical smog does not contain:

1. Ozone
2. NOx
3. PAN
4. Carbon monoxide

61.

The pH of normal rainwater is:

1. 1. 6.0 to 7.0
2. 6.5 to 7.5
3. 5.6 to 6.5
4. less than 5.5

62.

Which of the following statements regarding enzyme inhibition is correct?

(AIPMT 2005)

- (1) Competitive inhibition is seen when a substrate competes with an enzyme for binding to an inhibitor protein
- (2) Competitive inhibition is seen when the substrate and the inhibitor compete for the active site on the enzyme
- (3) Non-competitive inhibition of an enzyme can be overcome

by adding large amount of substrate

- (4) Non-competitive inhibitors often bind to the enzyme irreversibly

63.

In general, with every  $10^0\text{C}$  rise in the temperature [in the range  $0^0\text{C}$  to  $40^0\text{C}$ ], the rate of enzyme catalyzed reaction:

1. Becomes half
2. Gets doubled
3. Remains same
4. There is no such correlation in general

64.

Which is wrong? (AIPMT-2007)

1. Both chloroplast and mitochondrion have an internal compartment or thylakoid space bounded by thylakoid membrane
2. Both contain DNA
3. Chloroplast is generally larger
4. Both are covered by double membrane.

65.

The number of correct statements regarding Golgi apparatus amongst the given statements will be:

- I. The concave trans surface is the maturing face
  - II. The cis and trans faces are entirely different but interconnected
  - III. It remains in close association with the endoplasmic reticulum
  - IV. Site of formation of glycoproteins and glycolipids
1. 1
  2. 2
  3. 3
  4. 4

66.

Acid hydrolases are present in single membrane bound organelles called:

1. Glyoxysome
2. Lysosome
3. Peroxisome
4. Ribosome

67.

Which one of the following is not a correct statement? (NEET 2013)

1. Botanical gardens have collection of living plants for reference
2. A museum has collection of photographs of plants and animals
3. Key is taxonomic aid for identification of specimens
4. herbarium houses dried, pressed and preserved plant specimens

68.

Which one of the following kinds of animals are triploblastic ? (AIPMT 2009)

1. Sponges
2. Ctenophores
3. Corals
4. Flat worms

69.

In which of the following animals, the body is cylindrical and is composed of an anterior proboscis, a collar and a long trunk?

1. Hemichordates
2. Urochordates
3. Cephalochordates
4. Vertebrate chordates

70.

Perhaps the biggest reason for the enormous success of Arthropods is?

1. Chitinous exoskeleton
2. Diverse appendages
3. Respiration by tracheoles
4. Internal fertilization

71.

Which type of white blood cells are concerned with the release of histamine and the natural anticoagulant heparin? [AIPMT 2008]

1. Neutrophils
2. Basophils
3. Eosinophils
4. Monocytes

72.

Cockroaches are:

1. Nocturnal carnivores
2. Nocturnal omnivores
3. Diurnal carnivores
4. Diurnal omnivores

73.

In a longitudinal section of a root, starting from the tip upward, the four zones occur in the following order- (AIPMT-2004)

1. Root cap, cell division, cell enlargement, cell maturation.
2. Root cap, cell division, cell maturation, cell enlargement.
3. Cell division, cell enlargement, cell maturation, root cap.
4. Cell division, cell maturation, cell enlargement, root cap

74.

Stems modified into flat green organs performing the functions of leaves are known as : (NEET-I - 2016)

1. Scales
2. Cladodes
3. Phyllodes
4. Phylloclades

75.

Which pair belongs to basidiomycetes (AIPMT-2006)

1. Puffball and Claviceps
2. Peziza and Stink Horn
3. Morchella and Mushroom
4. Bird Nest Fungus and Puffball

76.

Which one is living fossil (AIPMT-2003)

1. Pinus
2. Cycas
3. Selaginella
4. None of these

77.

Identify the meiotic stage in which the homologous chromosomes separate while the sister chromatids remains associated at their centromeres (AIPMT MAINS 2012)

1. Anaphase I
2. Anaphase II
3. Metaphase I
4. Metaphase II

78.

The ovary is said to be half inferior in all the following except:

1. Mustard
2. Rose
3. Plum
4. Peach

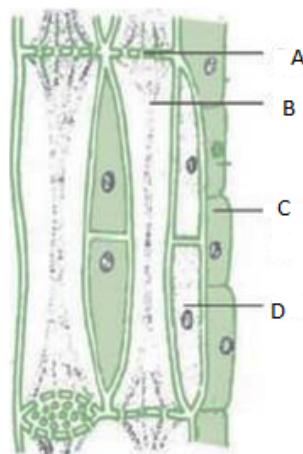
79.

Aestivation is:

1. mode of arrangement of sepals but not petals in a floral bud with respect to the other members of the same whorl
2. mode of arrangement of petals but not sepals in a floral bud with respect to the other members of the same whorl
3. mode of arrangement of sepals but not petals in a floral bud with respect to each other
4. mode of arrangement of sepals or petals in a floral bud with respect to the other members of the same whorl

80.

In the given diagram of phloem in an angiosperm, the structure not seen in most of the monocots is indicated by the letter:



1. A
2. B
3. C
4. D

81.

Phloem fibers [bast fibers] are:

1. made up of collenchyma and generally not seen in primary phloem
2. made up of collenchyma and generally not seen in secondary phloem
3. made up of sclerenchyma and generally not seen in primary phloem
4. made up of sclerenchyma and generally not seen in secondary phloem

82.

Growth and reproduction are:

1. characteristics of cells and living things
2. defining properties of cells and living things
3. characteristics of cells but not of living things
4. defining properties of cells but not of living things

83.

Liquid endosperm in coconut forms due to:

1. Failure of cytokinesis after karyokinesis
2. Failure of karyokinesis before cytokinesis
3. Disruption of spindle fibers at metaphase
4. Continued DNA replication during cytokinesis

84.

Match each item in Column I [Type of cartilage] with one in Column II [Location] and select the correct answer from the codes given:

	COLUMN I		COLUMN II
A	Hyaline	a	Intervertebral discs
B	Fibrous	b	Pinna, epiglottis, tip of nose
C	Elastic	c	Sternum, hyoid, ribs

Codes

- A B C  
 1. a b c  
 2. c b a  
 3. c a b  
 4. a c b

85.

The following are not mentioned in the five kingdom classification of Whittaker except:

1. Viruses
2. Viroids
3. Euglena
4. Lichens

86.

Potato Spindle Tuber Disease is caused by a pathogen that is:

1. A nucleocapsid
2. Low molecular weight free RNA
3. An abnormally folded protein

4. A protozoan

87.

Sexual reproduction takes place through flagellated gametes that are similar in size in:

1. Ulothrix
2. Spirogyra
3. Volvox
4. Fucus

88.

Ecologically important first colonizers of rocks are:

1. Lichens
2. Algae
3. Gymnosperms
4. Angiosperms

89.

The currently accepted definition of biological species was pioneered by:

1. John Ray
2. G. G. Simpson
3. Ernst Mayr
4. Ernst Haeckel

90.

Perhaps the most obvious and technically complicated feature of all living organisms is:

1. Capability to reproduce to produce similar offspring
2. Ability to grow from inside
3. Ability to sense and respond to environmental stimuli
4. Metabolism inside a defined boundary of a cell

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