SATISH SCIENCE ACADEMY

Where We Shape The Career **Time :**

Date : **MHT-CET BIOLOGY MOCK TEST 03** **No. MCQ**

1. Which one of the following expanded forms of the following acronyms is correct?
(a) UNEP United Nations Environmental Policy
(b) EPA Environmental Pollution Agency
(c) IUCN International Union for Conservation of Nature and Natural Resources
(d) IPCC International Penal for Climate Change

2. Which of the following is a natural pollutant?
(a) Smog (b) Volcanic gases
(c) Strong wind (d) Gale

3. When domestic sewage mixes with river water -
(a) small animals like rats will die after drinking river water
(b) the increased microbial activity releases micronutrients such as iron
(c) the increased microbial activity uses up dissolved oxygen
(d) the river water is still suitable for drinking as impurities are only about 0.1 %

4. Where among the following will you find the pitcher plant?
(a) Rain forest of Northeast India (b) Sunderbans
(c) Thar Desert (d) Western Ghats

5. Match the animals given in Column I with their location in Column II.

Column I	Column II
A. Dodo	1. Africa
B. Quagga	2. Russia
C. Thylacine	3. Mauritius
D. Stellar's sea cow	4. Australia

Codes

	A	B	C	D
(a)	1	3	2	4
(b)	4	3	1	2
(c)	3	1	2	4
(d)	3	1	4	2

6. Historically, island species have tended to become extinct faster than species living on a mainland. Which of the following reasons can not be used to explain this phenomenon?
(a) Island species have often evolved in the absence of predators and have no natural avoidance strategies.
(b) Humans have introduced diseases and competitors to islands, which negatively impacts island populations.
(c) Island populations are-usually smaller than mainland populations.
(d) Island populations are usually less fit than mainland populations

7. Decomposition is favoured by
(a) Warm and moist environment.
(b) Rich amount of nitrogen and water soluble substance like sugar in detritus.
(c) Aerobic environment
(d) All the above

8. In which of the following compartments of the global ecosystem would circulation of materials be affected by Earth's revolution around the sun?
(a) Oceans (b) Fresh waters
(c) Atmosphere (d) All of the above

9. A pond is
(a) A biome
(b) A natural ecosystem
(c) An artificial ecosystem
(d) A community of plants and animals only.

10. Consider the following statements (A to D) each with one or two blanks.
(A) Bears go into __**(a)**__ during winter to __**(b)**__ cold weather.
(B) A conical age pyramid with a broad base represents __**(c)**__ human population.
(C) A wasp pollinating a fig flower is an example of __**(d)**__.
(D) An area with high levels of species richness is known as __**(e)**__.
Which one of the following options, gives the correct fill ups for the respective blank numbers
from (a) to (e) in the statements?
(a) (c) stable (d) commensalism, (e) marsh
(b) (a) aestivation, (b) escape, (c) stable, (d) mutualism
(c) (c) expanding, (d) commensalism, (e) biodiversity park
(d) (a) hibernation, (b) escape, (c) expanding (e) hot spot

11. The plant-animal interaction often involve coevolution of the mutualists, so that
(a) the mutually beneficial system could be safeguarded against cheaters
(b) a given plant species can be pollinated only by its partner animal species and no other species
(c) the animal utilises plant not only for oviposition but also to pollinate the plant
(d) All of the above

12. The two sides of a given mountain have the same latitude and altitude. Are they likely to have the same climate?
(a) No, because there is likely to be less water on the side of the mountain that faces away from the prevailing wind
(b) No, because there is always on desert on one side of a mountain
(c) Yes, because latitude and altitude are the two most important climate-controlling factors
(d) Yes, because locations at the same latitude all have the same climate

13. Pathophysiology is the
(a) Study of physiology of pathogen (b) Study of normal physiology of host
(c) Study of altered physiology of host (d) None of the above

14. Bt toxin is harmful to insects like -
(a) Lepidopterans (tobacco budworm, armyworms)
(b) Coleopterans (battles)
(c) Dipterans (flies and mosquito)
(d) All

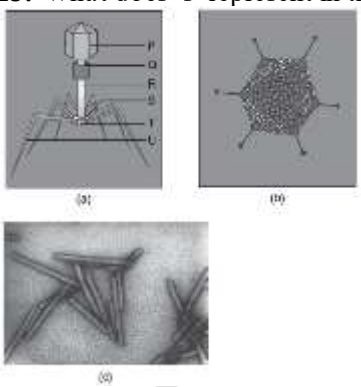
15. Introduction of genetically modified food is not desirable because -
(a) Allergies and toxicity may be caused
(b) Incorporation of antibiotic resistance in human beings
(c) Disturbance in metabolism due to enzyme for antibiotic resistance
(d)AII

16. Which of the following is a plasmid?
(a) pBR322 (b) BamHI
(c) SalI (d) EcoRII

17. A foreign DNA and plasmid cut by the same restriction end nuclease can be joined to form a recombinant plasmid using
(a) Taq polymerase (b) Polymerase III
(c) Ligase (d) Eco RI

18. The DNA fragments separated on an agarose gel can be visualised after staining with
(a) bromophenol blue
(b) acetocarmins
(c) aniline blue
(d) ethidium bromide

19. What does 's' represent in the figure (a)?



(a) Plate (b) Head
(c) Tail (d) Prongs

20. What is shown in the figure?

(a) Transmission electron microscope (b) Fermentation plant
(c) Sewage treatment (d) Large Hadron Collider

21. The primary treatment of waste water involves the removal of
(a) Dissolved impurities (b) Stable particles
(c) Toxic substances (d) Harmful bacteria

22. What would happen if oxygen availability to the activated sludge flocs is reduced?
(a) It will slow down the rate of degradation of organic matter.
(b) The centre of floes will become anoxic, which would cause the death of bacteria and
eventually breakage of flocs.
(c) Flocs would increase in size as anaerobic bacteria would grow around flocs.
(d) Protozoa would grow in large numbers.

23. A technique of micro propagation is
(a) Somatic hybridization (b) Somatic embryogenesis
(c) Protoplast fusion (d) Embryo rescue

24. You are given a tissue with its potential for differentiation in an artificial culture. Which of the
following pairs of hormones would you add to the medium to secure shoots as well as roots?
(a) Auxin and cytokinin
(b) Auxin and abscisic acid
(c) Gibberellin and abscisic acid
(d) IAA and gibberrellin

25. Pollen grains of a plant whose 2n = 28 are cultured to get callus by tissue culture method. What would be the number of chromosomes in the cells of the callus?
(a) 14 (b)86 (c)102 (d) 11

26. Nicotine stimulates which gland primarily?
(a) Salivary (b) Pancreas
(c) Spleen (d) Adrenal

27. If regular dose of drugs/alcohol is abruptly discontinued it causes _____.
(a) Hallucinations (b) Withdrawal syndrome
(c) Diversion to criminal activities (d) Severe depression

28. Which of the following toxic substances is responsible for the high malarial fever?
(a) Haemoglobin (b) Haemocyanin
(c) Haemozoin (d) Haemoriden

29. The disease chikungunya is transmitted by
(a) house flies (b) Aedes mosquitoes
(c) cockroach (d) female Anopheles

30. Hereditary disease is -
(a) diabetes (b) Haemophilia
(c) Cretinism (d) none of these

31. Molten mass on early earth produced
(a) Water vapour and CH4 (b) CO2
(c) NH3 (d) All of these

32. Organs which have the same fundamental structure but different in functions are called
(a) Vestigial organs (b) Analogous organs
(c) Homoplastic organs (d) Homologous organs

33. For the MN-blood group system, the frequencies of M and N alleles are 0.7 and 0.3, respectively.
The expected frequency of MN-blood group bearing organisms is likely to be
(a) 42 per cent (b) 49 per cent
(c) 9 per cent (d) 58 per cent

34. Why are mice killed by smooth (S) strains of Streptococcus, but not rough (R) strains?
(a) Rough strains are virulent, and smooth strains are not.
(b) Rough strains have a polysaccharide capsule that makes the mouse immune system recognize and destroy them.
(c) Smooth strains have a polysaccharide capsule, which hides them from the mouse immune system.
(d) Smooth strains grow faster than rough strains.

35. Tailoring of hnRNA is done by
(a)Snurps (b)lntrons
(c) Exons (d)18SrRNA

36. Which statement about complementary base pairing is not true?
(a) It plays a role in DNA replication.
(b) In DNA, T pairs with A *
(c) Purines pair with purines, and pyrimidines pair with pyrimidines.
(d).ln DNA, C pairs with G.

37. Of the ____ different possible codons, ____ specify amino acids and _____ signal stop,
(a) 20,17,3 (b) 180,20,60
(c) 64,61,3 (d) 61,60,1

38. Linkage in Drosophila was first discovered by
(a) Morgan (b) Bateson and Punnett
(c) Sturtevant (d) Bridges

39. A normal-visioned man whose father was colour blind, marries a women whose father was also colour blind. They have their first child as a daughter. What are the chances that this child would be colour blind?
(a) 100% (b) 0%
(c) 25% (d) 50%

40. F_1-progeny of a cross between pure tall and dwarf plant is always
(a) tall (b) short
(c) intermediate (d) None of these

41. Linkage group is
(a) linearly arranged group of linked gene
(b) non-linearly arranged group of linked gene
(c) non-linearly arranged group of unlinked gene
(d) non-linearly arranged group of single gene

42. LNG-20 is a
(a) Fuel (b) Modified crop
(c) Hormonal IUD (d) Cu releasing IUD

43. Select the hormone releasing intrauterine devices.
(a) Multiload-375, Progestasert
(b) Progestasert, LNG-20
(c) Lippes loop, Multiload-375
(d) Vaults, LNG-20

44. During which phase of the pregnancy MTP is safe?
(a) 1st trimester
(b) 2nd trimester
(c) 3rd trimester
(d) 4th trimester

45. Birth canal is formed by
(i) Uterus (ii) Cervix
(iii) Vagina
(a) i and ii (b) i and iii
(c) ii and iii (d) iii only

46. The spermatogonia undergo division to produce sperms by the process of spermatogenesis.
Choose the correct one with reference to above.
(a) Spermatogonia have 46 chromosomes and always undergo meiotic cell division
(b) Primary spermatocytes divide by mitotic cell division
(c) Secondary spermatocytes have 23 chromosomes and undergo second meiotic division
(d) Spermatozoa are transformed into spermatids

47. Which of the germ layers in best abociated with the development of Leant ?
(a) Ectoderm (b) Endoderm
(c) Mgoderm (d) All of these

48. Gametes are formed during
(a) spermatogenesis (b) oogenesis
(c) gametogenesis (d) spermogenesis

49. After three meiotic divisions in the functional megaspore, the gametophyte (embryosac) has how many cells.
(a) 7 cells (b) 4 cells
(c) 5 cells (d) 8 cells

50. Which one of the following is correct for endosperm?
(a) The cells of this tissue are filled with reserve food material.
(b) Used for nutrition of developing embryo.
(c) PEN undergoes nuclear division followed by cytokinesis.
(d) All the above

51. The advantage of cleistogamy is
(a) Higher genetic variability
(b) More vigorous offspring
(c) No dependence on pollinators
(d) Vivipary

52. Which one of the following statement is correct?
(a) Hard outer layer of pollen is called intine

(b) Sporogenous tissue is haploid
(c) Endothecium produces the microspores
(d) Tapetum nourishes the developing pollen

53. Find out the correct statement -
(a) Life spans of organisms are necessarily correlated with their sizes
(b) The sizes crows and parrots are not very different, so their life spans are almost similar
(c) A peepal tree has much shorter life span as compared to a mango tree
(d) Reproduction is essential for continuity cf species on the earth

54. Find the correct statement.
(a) 'Reproductive phase' is of same duration in all organisms.
(b) Birds in captivity can be made to lay eggs throughout the year.
(c) Female of non-primates shows cyclical changes during reproductive phase which is known as menstrual cycle.
(d) Perennial plants show clear cut vegetative, reproductive and senescent phase.

55. Bamboo species Hovers-
(a) Every year (b) Once is 12 years
(c) Only once in life time (d) Twice is in 50-100 year

56. Select from the following the total number of endocrine glands:
Pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, thymus, gonads
(a) 7 (b) 8
(c) 6 (d) 5

57. The following are peptide hormones except
(a) Insulin (b) PTH
(c) Thymosin (d) T_4

58. Which of the following do not play any role in calcium balance in the human body?
(a) Vitamin-D (b) Parathyroid hormone
(c) Thyrocalcitonin (d) Thymosin

59. Limbic system consists of
(a) Amygdala (b) Hippocampus
(c) Both (a) and (b) (d) None of these

60. Vestibular apparatus consists of
(a) semicircular canal (b) Saccule
(c) Utricle (d) All of these

61. Malleus (hammer shape), incus (anvil shape) and stapes (stirrup shape) are present in
(a) Internal ear of frog (b) Middle ear of human
(c) Eye of rabbit (d) Eye of frog

62. Otolith organ consist of
(a) Saccule (b) Utricle
(c) Semicircular canal (d) Both (a) and (c)

63. Arrange the following steps in order
(1) Excessive loss of fluid
(2) Stimulation of osmoreceptor
(3) Stimulation of Hypothalamus
(4) Release of ADH or Vasopressin
(5) ADH facilitate water reabsorption from distal tubules
(6) Increase in body fluid switch off osmoreceptor and suppress the release of ADH.
(a) 1, 2, 3, 4, 5, 6 (b) 1, 3, 2, 4, 5, 6
(c) 6, 1, 2, 3, 4, 5 (d) 2, 3, 4, 1, 5, 6

64. A fall in glomerular filtration rate (GFR) activates
(a) Adrenal cortex to release aldosterone
(b) Adrenal medulla to release adrenaline
(c) Posterior pituitary to release vasopressin
(d) Juxtaglomerular cells to release rennin

65. Choose the incorrect option for the layers present between the glomerulus and Bowman's capsule.
(a) Epithelium is the layer of glomerular blood vessels
(b) Basement membrane is present between the endothelium and epithelium
(c) Endothelium is the layer of Bowman's capsule
(d) Both (a) and (c)

66. Which test is performed to detect the presence of bile salts in the urine?
(a) Lugol's iodine test
(b) Gmelin's test
(c) Fouchet's test
(d) All of these

67. Which enzyme causes conversion of prothrombin into thrombin?
(a) Thrombin (b) Prothrombinase
(c) Thrombokinase (d) Rennin

68. Lymph
(a) Transports oxygen to brain
(b) Transports CO_2 to lungs
(c) Returns interstitial fluid to blood
(d) Returns RBCs and WBCs to lymph nodes

69. Find the incorrect matching:
(a) CAD–Atherosclerosis (b) Angina–Angina pectoris
(c) Stroke volume–Beat volume (d) Heart failure–Heart attack

70. Cells which lack nucleus in humans are
(a) RBC
(b) neutrophils
(c) eosinophils
(d) erythrocytes

71. Which of the following statements is incorrect regarding respiratory system?
(a) Each terminal bronchiole gives rise to a network of bronchi
(b) the alveoli are highly vascularised
(c) the lungs are covered by a double-layered membrane
(d) the pleural fluid reduces friction on the lung surface

72. Lungs are comprised by -
(a) Only alveoli
(b) Pleura
(c) Different types of bronchi
(d) Network of bronchi, bronchioles and alveoli

73. The majority of co2 is transported as -
(a) Carbonates
(b) Bicarbonates
(c) Carbaminohaemoglobin
(d) Dissolved state in blood

74. The largest proportion of CO_2 carried by blood is in the form of -
(a) Molecular co2 dissolved in the plasma
(b) Bicarbonates (HCO_2-) carried within RBCs
(c) HCO_3- carried in the plasma
(d) Molecular CO_2 chemically bound to haemoglobin

75. Stomach is divided into how many major parts?
(a) 1 (b) 2
(c) 3 (d) 4

76. Which of the following guards the opening of hepatopancreatic duct into the duodenum?
(a) Semilunar valve (b) Ileocaecal valve
(c) Pyloric sphincter (d) Sphincter of Oddi

77. Go through the following statements and select the one which is correct regarding starch digestion?
(a) Digestion of starch starts from the stomach
(b) Around 30% of the starch is digested in the stomach
(c) Digestion of food requires the action of pancreatic juices
(d) During absorption, end products are passed through stomach into the small intestine

78. Protein digesting enzyme is -
(a) Pepsin (b) Chymotrypsinogen
(c) Trophoprotein (d) Amylase

79. Skoog and miller termed cytokinin as
(a) Cytokinesis (b) Kinetin
(c) Both (a) and (b) (d) None of these

80. Cytokinins have specific effects on
(a) Cytokinosis (b) cytokinesis
(c) Cytoketosis (d) Cytolysis

81. Who isolated auxin from coleoptile seedling for the first time -
(a) Darwin (b) Miller
(c) Skoog (d) F. W. Went

82. Which one is false?
(a) Gf\3 is used t-0 speed up the malting process in brewing industry
(b) Spraying juvenile conifers with GAs hastens the maturity, thus leading to early seed production
(c) GA3 is a commercially available gibberellin
(d) GA3 cannot increase the length of internode in sugarcane

83. In animal cells, like muscle, during exercise, when o2 is inadequate for cellular respiration, pyruvic acids is reduced into lactic acid by -
(a) O2 (b) Carboxylation
(c) lactate dehydrogenase (d) All

84. Which is not found inside the mitochondrion?
(a) Citric acid (b) PEP or PEPA
(c) Malic acid (d) Ketoglutaric acid

85. In aerobic cellular respiration, which generates more ATP-
(a) Substrate level phosphorylation
(b) Chemiosmosis
(c) Both generate the same amount of ATP
(d) Neither generates ATP

86. Read the following four statements (A to D):
(A) Both, photophosphorylation and oxidative phosphorylation involves the uphill transport of protons across the membrane.
(B) In dicot stems, a new cambium originates from the cells of pericycle at the time of secondary growth.
(C) Stamens in flowers of Gloriosa and Petunia are polyandrous.
(D) Symbiotic nitrogen-fixers occur in free-living state also in soil.
How many of the above statements are right?
(a) Three (b) Four
(c) One (d) Two

87. The process that is the opposite of nitrogen fixation is:-
(a) Nitrification (b) Denitrification
(c) Ammonification (d) Nitrate reduction

88. Rhizobium is -
(a) Coccus (b) Spiral
(c) Rod-shaped (d) filamentous

89. Which of the following plants economizes the transpirational loss of water?
(a) C_3 (b) C_4
(c) Both equally (d) C_2

90. Which one(s) is / are correct about porins?
(I) They are proteins
(II) They form huge pores in the outer membrane of plastids, mitochondria and some bacteria
(III) They allow molecules upto the size of small proteins to pass through
(a) All are correct (b) All are incorrect
(c) I and III are correct (d) I and II are correct

91. Root pressure -
(a) Is not sufficient to rise water above ground level
(b) Is negative in all except the tallest trees
(c) Is the driving force for the mass flow of sugar
(d) can push water upto small heights in the stem

92. Stomatal movement is not affected by
(a) O_2 concentration
(b) Light
(c) Temperature
(d) CO_2 concentration

93. Major classes of biologically significant large molecules include which of the following?
(a) Proteins (b) Nucleic acids
(c) Carbohydrates and Lipid (d)All

94. Choose the correct statement(s)-
(a) Km (Michaelis - Menten) constant is the substrate concentration at which the enzymatic reaction attains half or its maximum velocity (1/2 Vmax)
(b) At lower Km, higher the substrate affinity for enzyme
(c) Vmax is reached when all the active sites of an enzyme are saturated with substrate
(d)All

95. The inorganic compounds like phosphate, sulphate, etc., which become available in the filtrate after grinding the living tissue is trichloroacetic acid represent
(a) acid–soluble pool
(b) acid–insoluble pool
(c) water pool
(d) gaseous pool

96. Following are present in gut of cows and buffaloes and is responsible for the production of methane from he dung of these animals
(a) Methanogen (b) Thermoacidophiles
(c) Halophils (d) All of these

97. The following fungus belongs to class ascomycetes (count the total number).
Rhizopus, Penicillium, Yeast, Mucor, Agaricus, Puccinia, Albugo, Claviceps, Neurospora,
Alternaria, Trichoderma, Aspergillus, Ustilago, Morels, Buffles, Colletotrichum, Toadstool
(a) 5 (b) 7
(c) 9 (d) 10

98. Which of the following fungi only reproduce by asexual spores conidia?
(a) Alternaria (b) Colletotrichum
(c) Trichoderma (d) All of these

99. Which one among the following statements is NOT correct?
(a) Contractile vacuoles regulate osmoregulation in marine protozoans
(b) Euglena is a holophytic protozoan
(c) Trypanosoma belongs to the class Mastigophora
(d) Class sporozoan includes plasmodium

100. Secretion of saliva can be stimulated by
(a) Sight of food
(b) Smell of food

(c) Presence of food in oral cavity
(d)All