SATISH SCIENCE ACADEMY

Where We Shape The Career **Time :**

Date : **MHT-CET BIOLOGY MOCK TEST 02** **No. MCQ**

1. In a aquatic food chain polluted by DDT, the tissue concentration of DOT would be highest in
(a) Aquatic weed (b) Herbivorous fish
(c) Carnivores fish (d) Bird feeding on fish

2. The thickness of ozone over poles changes with the season being lowest in
(a) Antarctic spring (b) Polar autumn
(c) Antarctic autumn (d) North hemisphere sprin

3. The organization which publishes the Red list of species is
(a) ICFRE (b) IUCN
(c) UNEP (d) WWF

4. Which of the following was the first National Park of India?
(a) Corbett (b) Nanda Devi
(c) Kaziranga (d) Jaldapara

5. A functional unit of nature, where living organisms interact among themselves and also with the surrounding physical environment is
(a) biosphere (b) ecosystem
(c) environment (d) None of these

6. Under unfavourable conditions, many species of zooplankton which lives in small water bodies are known to enter _____
(a) Diapause (b) Metapause
(c) Neopause (d) Monopause

7. The source of Tag polymerase used in PCR technique is a
(a) Thermophilic fungus (b) Mesophilic fungus
(c) Thermophilic bacteria (d) Halophilic bacteria

8. DNA or RNA segment tagged with a radioactive molecule is called
(a) Vector (b) Probe
(c) Clone (d) Plasmid

9. Which part of the tobacco plant is infected by Meloidogyne incognita?
(a) Flower (b) Leaf
(c) Stem (d) Root

10. Biotechnology helps in synthesizing
(a) New generation antibiotics (b) New vaccines
(c) MAB (d) All of these

11. Process by which we can add or delete certain gene is :
(a) Gene therapy (b) Biotechnology
(c) Genetic engineering (d) Cytogenetics.

12. Genetic engineering in possible because-
(a) The pheromenan of transduction in bacteria is well understood.
(b) We can see DNA by electron microscope
(c) We can cut DNA at specific sites by endonucleare like DNA ase
(d) Restriction endonucleare purified from bacteria can be used in vitro.

13. Methanogens do not produce
(a) Oxygen (b) Methane
(c) Hydrogen sulphide (d) Carbon dioxide

14. Choose the correct sequence of microbes involved in biogas production -
(a) Fragmentative microbes, decomposers methanogehs
(b) Decomposers, methanogens, putrefying microbes
(c) Putrefying microbes, methanogens, saprophytic microbes
(d) Decomposers fermentative microbes, methanogens

15. Sterilization means
(a) Inactivation of microorganisms
(b) Temporary destruction of microorganisms
(c) Complete destruction or killing of microorganisms
(d) Induction of immunity in microorganisms

16. A self fertilizing trihybrid plant forms
(a) 4 different gametes and 16 different zygotes
(b) 8 different gametes and 16 different zygotes
(c) 8 different gametes and 32 different zygotes
(d) 8 different gametes and 64 different zygotes

17. Which part of the lungs is infected in pneumonia?
(a) Alveoli (b) Trachea
(c) Bronchus (d) Terminal bronchiole

18. Which of the following is a primary lymphoid organ?
(a) Thymus (b) Spleen
(c) Tonsils (d) Lymph nodes

19. Antigenic determinant sites bind to which portions of an antibody molecule?
(a) Light chains (b) Heavy chains
(c) Intermediate chains (d) Both (a) & (b)

20. Mark the wrong statement.
(a) Ascariasis, Taeniasis and Enterobiasis are helminthic diseases.
(b) Measles, Mumps and Rubella are viral disease.
(c) Malaria, Amoebiasis and Filariasis are protozoan diseases.
(d) Cholera, Diphtheria and Tetanus are bacterial diseases.

21. Which of the following is a true statement?
(a) The primitive atmosphere had 20 per cent oxygen, just like it is today.
(b) The reducing primitive atmosphere contributed to the origin of life and the oxidizing one today would hinder it.

(c) The primitive atmosphere was an oxidizing one and today's is a reducing one, making photosynthesis possible.
(d) It took so long for prokaryote evolution because the primitive atmosphere screened out the ultraviolet radiation from the sun.

22. The most important theory of evolution was proposed by
(a) Beadle and Tatum (b) Watson and Crick
(c) Darwin and Wallace (d) Mendel and Morgan

23. Life originated in the era:
(a) proterozoic (b) Mesozoic
(c) precambrian ' (d)coenozoic

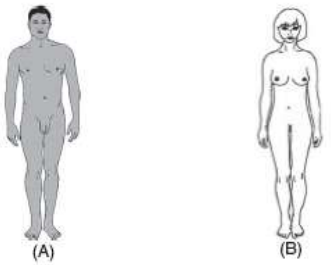
24. Additional sequences on mRNA referred to as _____ are not translated.
(a) Variable number tandem repeats (b) Non coding sequence
(c) Untranscribed regions (d) Untranslated regions

25. Which was the last human chromosome to be completely sequenced?
(a) Chromosome 1 (b) Chromosome 11
(c) Chromosome 21 (d) Chromosome x

26. Mutations are
(a) heritable changes in the sequence of DNA bases that produce an observable phenotype.
(b) heritable changes in the sequence of DNA bases.
(c) mistakes in the incorporation of amino acids into proteins.
(d) heritable changes in the mRNA of an organism.

27. SNP which is pronounced as "snips" stands for
(a) Small nuclear protein
(b) Single nucleotide particle
(c) Single nucieotide polymorphism
(d) Small nicking points

28. Identify the syndrome of diagrams a and b, respectively.



(a) A: Down's syndrome, B: Turner's syndrome
(b) A: Klinefelter's syndrome, B: Turner's syndrome
(c) A: Turner's syndrome, B: Klinefelter syndrome
(d) A: Turner's syndrome, B: Down's syndrome

29. If two persons with 'AB' blood group marry and have sufficiently large number of children, these children could be classified as 'A' blood group : 'AB' blood group : 'B' blood group in 1 : 2 : 1 ratio. Modern technique of protein electrophoresis reveals the presence of both 'A' and 'B' type proteins in 'AB' blood group individuals. This is an example of
(a) Codominance (b) Incomplete dominance
(c) Partial dominance (d) Complete dominance

30. A disease caused by an autosomal primary non-disjunction is
(a) Down's syndrome (b) Klinefelter's syndrome
(c) Turner's syndrome (d) Sickle-cell anaemia

31. Which of the following option (s) is/are correct for starch synthesis in pea seeds controlled by single gene which has two allelic forms B and b?
(a) BB is round seed with large starch synthesis
(b) bb is wrinkled seed with large starch synthesis
(c) Bb is round seed with less starch synthesis
(d) All of the above

32. Implants (the progesterone or progesterone-oestrogen combination) are used by the females usually under the
(a) skin of the inner arm above elbow
(b) vagina
(c) upper skin of stomach
(d) cervix

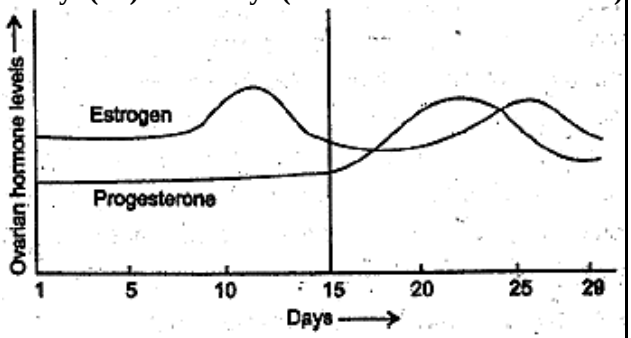
33. India's population crossed I billion in
(a)May2001 (b) Dec. 1999
(c) May 2000 (d) Dec. 1991

34. Immature male germ cells are known as
(a) Spermatid (b) Spermatozoa
(c) Spermatogonia (d) Sperm

35. How many ovum(s) is/are released in one menstruation?
(a) 1 (b) 2
(c) 3 (d) 4

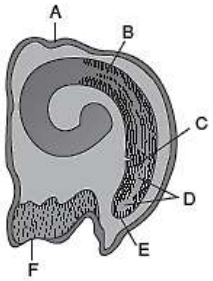
36. The vas deferens receives duct from the seminal vesicle and opens into urethra as
(a) Epididymis (b) Ejaculatory duct
(c) Efferent ductule (d) Ureter

37. Read the graph and correlate the uterine events that take place according to the hormonal levels on (I) 6-15 days (II) 16-25 days (III) 26-28 days (if the ovum is not fertilized)



(a) I - Degeneration of endometrium, II -Myometrium thickens, becomes vascularised, ready to receive and implant embryo, III - Regeneration of endometrium.
(b) I - Degeneration of endometrium, II - Endometrium thickens, becomes vascularised, ready to receive and implant ovum, III - Regeneration of endometrium.
(c) I - Degeneration of endometrium, II - Endometrium thickens, becomes vascularised, ready to receive and implant embryo, III - Regeneration of endometrium.
(d) I - Regeneration of endometrium, II - Endometrium thickens, becomes vascularised, ready to receive and implant embryo, III - Degeneration of enddrhetrium.

38. What indicates 'A' in the above figure?



(a) Cotyledon (b) Hypocotyl root axis
(c) Seed coat (d) Endosperm

39. In which one of the following, pollination is autogamous?
(a) Xenogamy (b) Chasmogamy
(c) Cleistogamy (d) Geitonogamy

40. Refer to the given characteristics of some flowers:
(I) Flowers are small. They are often packed in inflorescence.
(II) Flowers are colourless, nectarless and odourless
(III) Well exposed stamens.
(IV) Pollen grains produced in large number, light and non-sticky.
(V) Flowers often have a single ovule in each ovary.
(VI) Stigma-large, often feathery.
The above features are the characteristics of
(a) Self-pollination
(b) Anemophily (pollination by wind)
(c) Ornithophily (pollination by birds)
(d) Entomophily (pollination by insects)

41. A _____ to an anther is like embryo sac to ovule
(a) stamen
(b) filament
(c) pollen grain
(d) androecium

42. Which of the following situations correctly describe the similarity between an angiosperm egg and a human gg?
i. Eggs of both are formed only once in a lifetime. Choose the statements that are true from the options below:
ii. Both the angiosperm egg and human egg are stationary.
iii. Both the angiosperm egg and human egg are motile transported.
iv. Syngamy in both results in the formation of zygote.
(a) ii and iv (b) iv only
(c) iii and iv (d) i and iv

43. Reproduction can be considered as
(a) a biological process
(b) a cycle of birth, growth and death
(c) a process that enables continuity of species
(d) All of the above

44. Name an organism where cell division is itself a mode of reproduction?
(a) Amoeba (b) E. coli
(c) Euglena (d) All of these

45. The adrenal cortex secretes many hormones commonly called
(a) Catecholamine (b) Peptide
(c) Corticoids (d) All of these

46. Which hormone directly affect transcription by acting on gene?
(a) FSH (b) GH
(c) Oestrogen (d) CCK

47. Insulin, a peptide hormone is
(a) mainly acts on hepatocytes and adipocytes
(b) enhances cellular glucose uptake and utilisation
(c) stimulates conversion of glucose to glycogen in the target cells
(d) All of the above

48. The hormones produced by hypothalamic nuclei
(a) regulate the functions of the anterior pituitary.
(b) regulate the functions of the posterior pituitary.
(c) regulate the functions of both anterior and posterior pituitary.
(d) inhibit the secretion of posterior pituitary hormones.

49. The fovea is a _____ portion of the _____
(a) Thick-out, sclera (b) Thin-out, choroid
(c) Thin-out, retina (d) Thick-out, retina

50. Dendrites of neurons are
(a) highly branched, short fibres containing Nissl's granules
(b) unbranched, long process of cell body
(c) unbranched, short and do not contain cytoplasm
(d) branched, long process without cytoplasm

51. Identify the correct sequence of organs/regions in the organisation of human ear as an auditory mechanoreceptor organ.
(a) Pinna–Cochlea–Tympanic membrane canal–Malleus– Stapes–Incus–Auditory nerve
(b) Pinna–Tympanic membrane–Auditory canal–Incus– Malleus–Stapes–Cochlea–Auditory nerve
(c) Pinna–Malleus–Incus–Stapes–Auditory canal–Tympanic membrane–Cochlea–Auditory nerve
(d) Pinna–Auditory canal–Tympanic membrane–Malleus– Incus–Stapes–Cochlea–Auditory nerve

52. In mammalian kidneys, the Bowman's capsules or Malpighian corpuscles occur in
(a) Cortex (b) Medulla
(c) Pelvis (d) All of these

53. The maximum amount of electrolytes and water (70 to 80 per cent) from the glomerular filtrate is reabsorbed in which part of the nephron?
(a) Ascending limb of loop of Henle
(b) Distal convoluted tubule
(c) Proximal convoluted tubule
(d) Descending limb of loop of Henle

54. Nephrons in which the loop of Henle is very long and runs deep into the medulla are called
(a) cortical nephrons
(b) juxta-medullary nephrons
(c) medullary nephrons
(d) none of these

55. Assertion: Reptiles are uricotelic animals.
Reason: Reptiles excrete nitrogenous wastes as uric acid.
(a) Both Assertion and Reason are true and Reason is correct explanation of Assertion.
(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
(c) Assertion is true, but Reason is false.
(d) Assertion is false, but Reason is true.

56. During cardiac cycle each ventricle pumps out about 70 mL of blood which is called
(a) Stroke volume (b) Cardiac output
(c) Tidal volume (d) Residual volume

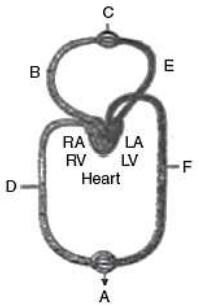
57. Match the Column I with Column II:

Column I	Column II
(A) Heart failure –	**(1) Heart muscle is suddenly damaged by an**

inadequate blood supply.
(B) Cardiac arrest – (2) Chest pain due to inadequate O2 reaching the heart muscles.
(c) Heart Attack – (3) Atherosclosis
(D) Coronary Artery disease – (4) Heart not pumping blood effectively enough to meet the needs of the body (CAD).
(E) Angina pectoris – 5. Heart stops beating

	A	B	C	D	E
(a)	4	5	1	3	2
(b)	4	5	3	1	2
(c)	4	3	5	2	1
(d)	5	4	2	3	1

58.



The given figure is the systematic plant of blood circulation in human. Identify from A to F.

	A	B	C	D	E	F
(a)	Body parts	Pulmonary vein	Lungs	Vena cava	Pulmonary artery	Dorsal aorta
(b)	Body parts	Pulmonary artery	Lungs	Vena cava	Pulmonary vein	Dorsal aorta
(c)	Body parts	Pulmonary artery	Lungs	Dorsal aorta	Pulmonary vein	Vena cava
(d)	Lungs	Pulmonary artery	Body parts	Dorsal aorta	Pulmonary vein	Vena cava

59. Cardiac output is determined by -
(a} Heart rate (b) Stroke volume
(c) Blood flow (d) Both a and b

60. Which of the following are functions of conducting part of the respiratory system?
(a) Removal of foreign particles from incoming air.
(b) Humidifies incoming air
(c) Bring the temperature of incoming air to body temperature.
(d) All the above

61. Total lung capacity is equal to
(a) ERV + TV (b) IRV+ TV
(c) VC + RV (d) ERV + TV + IRV

62. CO_2 dissociates from carbaminohemoglobin when
(a) pCO_2 is high and pO_2 is low
(b) pO_2 is high and pCO_2 is low
(c) pCO_2 and pO_2 are equal
(d) None of these

63. The tiny openings present along the body surface of insects through which air enters the tracheal tubes are called
(a) spiracles (b) lenticels
(c) stomata (d) hydathodes

64. Carrier ions is generally used for facilitated transport of fructose and some amino acids
(a) Ca^{2+} (b) Cl-
(c) K+ (d) Na+

65. About 30% starch is digested in -
(a) Mouth (b) Stomach
(c) Small intestine (d) Colon

66. Optimum pH for enzyme trypsin is -
(a) 7.9 (b) 5.6 (c) 8.5 (d) 7.0

67. In which of the following plant the leaves of juvenile plant are different in shape than those in mature plants?
(a) Cotton (b) Coriander
(c) Larkspur (d) All of these

68. Kinetin is _____
(a) Cytokinins (b) Modified form of adenine
(c) Purine (d) All of these

69. When are winter varieties planted?
(a) Spring (b) Winter
(c) Autumn (d) All of these

70. A farmer grows cucumber plants in his field. He wants to increase the number of female flowers in them. which plant growth regulator can be applied to achieve this?
(a) ABA (b) Ethylene
(c) GA (d) Cytokinins

71. Which of the following is correct about cytochrome?
(a) Small protein attaches to the outer surface of inner membrane of mitochondria.
(b) Act as mobile carrier.
(c) Transfers electron between complex III and IV.
(d) All the above

72. In cellular respiration, O2 is used as a final receptor of
(a) ATP and NADH (b) H and e-
(c) Fe (d) Cytochrome

73. How many molecules of o2 are used and how many co2 comes out during the glycolytic breakdown of one glucose molecule?
(a) 1; 2 (b) 2; 1
(c) 0; 0 (d) 36; 6

74. Which metabolic pathway is a common pathway to both anaerobic and aerobic metabolism?
(a) Glycolysis
(b) EMP pathway
(c) Both (a) and (b)
(d) None of the above

75. Which essential nutrient in plant is required in greatest amount?
(a) N (b) P
(c) K (d) Ca

76. In which of the following forms, iron is absorbed by plants?
(a) Free element (b) Ferrous
(c) Both ferric and ferrous (d) Ferric

77. More than _____ elements of the ___ discovered so far are found in different plants
(a) 60, 105 (b)105, 60
(c)30, 60 (d)4,105

78. Nitrate reduction -
(a) is performed by plants
(b) Takes place in mitochondria
(c) Is catalysed by nitrogenase
(d) Performed by specialized plant cells located in the root

79. Where are poring proteins present?
(a) Outer membrane of plastid (b) Inner membrane of mitochondria
(c) Inner membrane of some bacteria (d) Outer membrane of ribosomes

80. Go through the four statements given be I owl.

(I)Root pressure provides a light push in the overall process of water transport
(II) Most plants meet their water need by transpiration pull
(Ill) The greatest contribution of root pressure may be to re-establish the continuous chains of water molecule~, in the xylem vessel which often break under enormous tension created by transpiration
(IV) Guttation is the cause of transpiration pull
The correct statement is -
(a) I, II, III, IV (b) I, II, III
(c) II, III, IV (d) II, III

81. Water potential of a cell is lowered by the –
(a) Addition of solutes (b) Addition of water
(c) Addition of heat (d) Removal of solutes

82. What is the bare minimum of cell membranes a water molecule must traverse in order to get from soil to a xylem vessel?
(a)0 (b)1 (c)2 (d)6

83. Select the incorrect statement from the following:
(a) Cellulose does not contain complex helices.
(b) Cellulose does not give colour with I2.
(c) Cotton fibre, plant cell wall are made up of cellulose.
(d) Cellulose is heteropolysaccharide.

84. Glycogen is a homopolymer made of
(a) Glucose units (b) Galactose units
(c) Ribose units (d) Amino units

85. Select all false statements for an enzyme promoting a chemical reaction by -
(I) Lowering the energy of activation
(II) Causing the release of heat, which acts as a primer
(Ill) Increasing molecular motion
(IV) Changing the free energy difference between substrate and product
(a) I and IV (b) II and Ill
(c) II 'III, IV (d) Ill and IV

86. The organisms which are tolerant of a wide range of salinities are
(a) Salinotrophs (b) Euryhaline
(c) Salinosomes (d) Stenohaline

87. If a new habitat is just being colonized then which of the following options do you think would have a greater contribution towards population density?
(a) Mortality (b) Natality
(c) Immigration (d) Emigration

88. The r value for flour beetle is _____
(a) 0.15 (b) 0.12
(c) 0.21 (d) 0.012

89. Which of the following is a characteristic feature of cropland ecosystem?
(a) Absence of soil organisms (b) Least genetic diversity
(c) Absence of weeds (d) Ecological succession

90. What is true about photolithotrophs ?
(a) Obtain energy from radiations and hydrogen from organic compounds
(b) Obtain energy from radiations and hydrogen from inorganic compounds
(c) Obtain energy from organic compounds
(d) Obtain energy from inorganic compounds

91. Thalamus contributes in the fruit formation in
(a) apple (b) strawberry
(c) cashewnut (d) All of these

92. Which of the following is false?
(a) Wind-pollination is quite common in grasses
(b) Hydrophily is limited to about 30 genera mostly monocots
(c) Both wind and water pollinated flowers are not very colourful and do not produce nectar .
(d) None of the above

93. Which of these organisms has/have diploid parental body?
(a) Pteridophyte and gymnosperm (b) Angiosperm
(c) Most of the animals (d) All of these

94. The progenitor of the next generation inside the mature seed is known as
(a) Micropyle (b) Pericarp
(c) Embryo (d) Zygote

95. Baker's yeast is _____.
(a) Saccharomyces cariocanus (b) Saccharomyces florentinus
(c) Saccharomyces cerevisiae (d) Saccharomyces spencerorum

96. Which of the following antibiotics was discovered first?
(a) Streptomycin (b) Neomycin
(c) Erythromycin (d) Penicillin

97. Which pigment is involved in photoperiodic changes in plants?
(a) Phytochrome (b) Chlorophyll
(c) Cytochrome (d) Anthocyanin

98. Characteristic of plant growth includes which of the following -
(a) It is localised and generally determinate
(b) It is localized and generally indeterminate
(c) It is non-measurable
(d) It is diffused, determinate and non measurable

99. Amino acid enters in the respiratory pathway at
(a) Kreb's cycle (b) Pyruvate
(c) Acetyl CoA (d) Any of these

100.How many mechanism are there for clotting in our body?
(a) 1 (b) 2
(c) 3 (d) 4