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Where We Shape The Career **Time :**

Date : **MHT-CET BIOLOGY MOCK TEST 01** **No. MCQ**

1. Which of the following biomolecule absorbs UV radiation?
(a) DNA (b) Protein
(c) Both (a) and (b) (d) Carbohydrates

2. Two lakes, A & B are identical in all aspects except that lake A has higher temperature. Which of the following is true?
(a) A has higher rate of Oxyaen dissolution
(b) B has higher rate of Oxygen dissolution
(c) Oxygen dissolution of both is the same
(d) Both have same BOD

3. 'We save the entire forest to save the tiger'. This approach of conservation is
(a) In situ (b) Ex situ
(c) In vitro (d) In vivo

4. The impacts of loss of biodiversity include –
A. Decrease in plant production.
B. Lowered resistance to environmental perturbation
C. Increased variability in ecosystem processes like water use, pest / disease cycle, plants productivity.
D. None
(a) A, B (b)A, B, C
(c) B, C (d) D

5. What is common characteristic of earthworm, soil mites and dung beetle of an ecosystem?
(a) Primary producer (b) Primary consumer
(c) Secondary consumer (d) None of these

6. Productivity in terrestrial ecosystems is affected by
(a) temperature.
(b) light intensity,
(c) availability of nutrients and water.
(d) all of the above.

7. How much pressure is experienced by marine invertebrates and fishes living at the great depths in oceans?
(a) < 100 times that of normal atmospheric pressure
(b) < 100 times that of hydrostatic pressure
(c) > 100 times that of hydrostatic pressure
(d) > 100 times that of normal atmospheric pressure

8. What is the fate of a population that is dominated by younger individuals and lacking older individuals?
(a) Growing (b) Declining
(c) Becomes highly dynamic (d) Unpredictable

9. Genetic engineering is useful for
(a) Agriculture (b) Medical research
(c) Treatment and diagnosis of diseases (d) All of these

10.
I. Recombinant DNA technology is used to improve crop plants by increasing their productivity, by making them more nutritious and by developing disease resistant.
II. Bt cotton is resistant to bollworm infestation.
III. Bacillus thuringiensis form cry protein during any phase of their growth
IV. Bacillus thuringiensis is not harmed by self Cry protein because of its occurrence as protoxin (inactive)
V. Protoxin Cry protein is changed into active Cry protein in the stomach of insects due to alkane pH in stomach
(a) All are correct (b) I and IV are correct
(c) Only III is false (d) All are false

11. "Rosie" a transgenic cow known to produce a type of milk which has all the following characteristics except
(a) Protein content of 2.4 gm/litre
(b) Has human a-lactalbumin
(c) More balance diet than normal milk for babies
(d)None

12. In which disease the advancement of genetic engineering has still not been used as clinical cure.
(a)Ancephaly (b) Emphysema
(c) Phenylketonuria (d) Cystic fibrosis

13. The way to introduce alien DNA into host cell includes
(a) Disarmed pathogens (b) Biolistics or gene gun
(c) Micro-injection (d) All of these

14. Protein encoding gene which is expressed in heterologous host is
(a) foreign protein (b) heterologous protein
(c) recombinant protein (d) alien protein

15. After secondary treatment, the effluent is released into
(a) Digester tank (b) Filtration unit
(c) Water bodies (d) Chemical treatment unit

16. Name the blank spaces a, b, c and cf given in the following table

	Scientific Name	Commercial Proc
Bacterium	A	Clot buster enzyr
B	*Aspergillus niger*	Citric acid
Fungus	*Trichoderma polysporum*	C
Bacterium	D	Butyric add

(a) A- Streptococcus, B - Fungus, C - Cyclosporin-A , D - Clostridium butylicum.
(b) A- Clostridium butylicum., B - Streptococcus, C - Fungus, D - Cyclosporin-A

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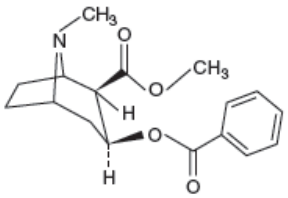
(c) A - Cyclosporin-A, B - Clostridium butylicum., C - Streptococcus, D - Fungus
(d) A- Fungus, B - Cyclosporin-A, C - Clostridium butylicum., D – Streptococcus

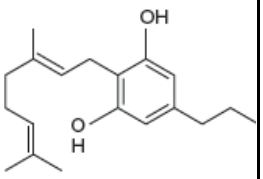
17. The gas responsible for puffing-up appearance of dough comes from -
(a) aerobic respiration (b) fermentation
(c) photosynthesis (d) photorespiration

18. 'Jaya' and 'Ratna' developed for green revolution in India are the varieties of
(a) Rice (b) Wheat
(c) Bajra (d) Maize

19. What was the colour of high yielding Mexican wheat?
(a) White (b) Pink
(c) Red (d) Grey

20. Identify the molecules (a) and (b) shown below and select the right option giving their source and use.





Molecule	Source	Use
(a) (b) Heroin	Cannabis sativa	Depressant and slows down body functions
(b) (b) Cannabinoid	Atropa belladonna	Produces hallucinations
(c) (a) Morphine	Papaver somniferum	Sedative and pain killer
(d) (a) Cocaine	Erythroxylum coca	Accelerates the transport of dopamine

21. Note the following words.
I. Skin II. Phagocytes
III. B-cells IV. Neutrophils
V. Antibodies VI. T-cells
VII. Macrophages VIII. NK-cells
Identify the factors involved in second line of defence.
(a) II, IV, VII and VIII (b) II, III, V and VI
(c) IV, VI, VIII and VIII (d) III, V, VII and VIII

22. Hodgkin's disease is-
(a) Cancer of WBC'S (b) Cancer of liver
(c) Cancer of lymphoid tissue (d) Cancer of mammary

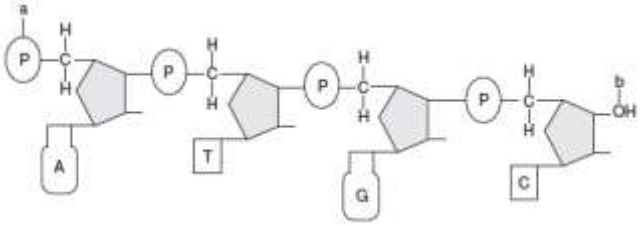
23. Sleeping pills contain
(a) Benzodiazepines (b) Psilocybin
(c) Tranquillisers (d)LSD

24. The tendency of population to remain in genetic equilibrium may be disturbed by
(a) Random mating (b) Lack of migration
(c) Lack of mutations (d) Lack of random mating

25. Which of the foHowing ways is most likely to decrease the genetic diversity in a population?
(a) Gene mutation
(b) eneticfeeombination
(c) Stabilizing natural selection
(d) Immigration of individuals

26. Being the hominid, the first human like creature was called
(a) Australopithecus (b) Homo habilis
(c) Homo erectus (d) Neanderthal man

27. What does the figure represent?



(a) Polysaccharide (b) Polynucleoside
(c) Polynucleotide (d) Polyamine

28. Bacteriophage lambda has _____ base pairs in nucleic acid (genetic material).
(a) 48205 (b) 5386
(c) 48502 (d) 45802

29. The unequivocal proof of DNA as the genetic material came from the studies on a
(a) Bacterium (b) Fungus
(c) Viroid (d) Bacterial virus

30. Griffith's experiments showing the transformation of R strain pneumococcus bacteria to S strain pneumococcus bacteria in the presence of heat-killed S strain bacteria gave evidence that
(a) an external factor was affecting the R strain bacteria
(b) DMA was definitely the transforming factor.
(c) S strain bacteria could be reactivated after heat killing.
(d) All of the above

31. Which of the following is genetically dominant in man?
(a) Colour blindness (b) Rh positive
(c) Haemophilia (d) Albinism

32. The phenotypic and genotypic ratios remain same in F_2 generation in case of
(a) dihybrid cross (b) supplementary genes
(c) incomplete dominance (d) inhibitory genes

33.

Column A	Column B
I. Turner syndrome	A. Trisomy
II. Linkage	B. AA + XO
III. Y-chromosome	C, Morgan
IV. Down's syndrome	D. TDF

The correct match is.
(a)l-'B, II- A, III-D, IV-C (b)l-D, II-A, III-B, IV-C
(c)!-D, II-B, III-A, IV-C (d)l-B,ll-C, III-D, IV-A

34. Bateson used the terms coupling and repulsion for linkage and crossing over. Name the correct parental or coupling type along with its cross over or repulsion:
(a) Coupling aaBB, aabb; Repulsion AABB, aabb
(b) Coupling AABB, aabb; Repulsion AABB, AAbb

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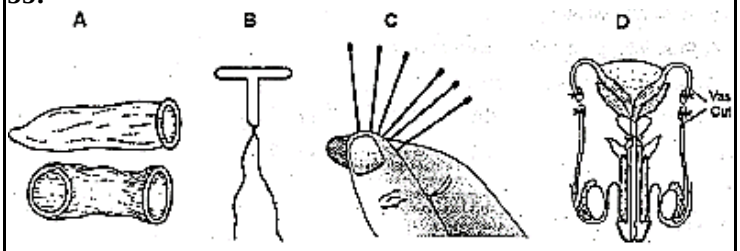
(c)Coupling AAbb, aaBB; Repulsion AaBb, aabb
(d) Coupling AABB, aabb; Repulsion AAbb, <,aB8

35.



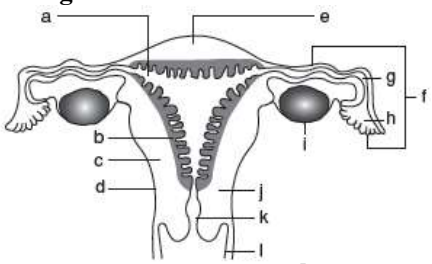
I. Tubectomy
II.Vasectomy
III. Implants
IV. Condoms
V. Copper!
VI. Cervical caps

(a)A-VI,B-V,C-lll, D-II.E-I (b) A-III, B-V, C-IV, D-l, E-ll
(c)A-IV, B-V, C-lll, D-ll, E-l (d)A-VI, B-V.C-IV, D-l, E-ll

36. Consider the following statements:
(A) In India, family planning program was initiated in 1982.
(B) Reproductive and Child Health Care (RCH) program is an improved version of family planning programs.
Select the correct option.

(a) **(A)** is true, **(B)** is false
(b) Both **(A)** and **(B)** are false
(c) **(A)** is false, **(B)** is true
(d) Both **(A)** and **(B)** are true

37. In the figure, identify the structure 'f ' which consists of 'g' and 'h'.



(a) Ovary (b) Fallopian tube
(c) Uterus (d) Cervix

38. Which of the following layers in an antral follicle is acellular?
(a) Theca intema (b) Stroma
(c) Zona pellucida (d) Granulosa

39. Which one of the following statement is false in respect of viability of mammalian sperm?
(a) Sperm is viable for only up to 24 hrs
(b) Survival of sperm depends on the pH of the medium and is more active in alkaline medium
(c) Viability of sperm is determined by its motility
(d) Sperms must be concentrated in a thick suspension

40. Leydig cells are found in
(a) testis (b) ovary
(c) vasa deferens (d) scrotum

41. Morphogenesis starts with
(a) Morulation (b) Blastulation
(c) GastrtHation (d) Neurulation

42. The tips on the ovule where integument are absent are called
(a) Germ pore (b) Micropyle
(c) Both (a) and (b) (d) None of these

43. Which one of the following statement is incorrect about pollination?
(a) Anemophily is by wind and occurs in grasses and date palm
(b) Hydrophily is by water and occurs in Zostera, Vallisneria and Ceratophyllum
(c) Entomophily is by insects and occurs in rose, jasmine, Salvia, etc.
(d) Ornithophily is by birds and occurs in Adansonia

44. Which of the following statements is false?
(I) Vallisneria and Hydrilla are fresh water plants while sea-grasses (e.g. Zostera) are marine plant.
(II) Vallisneria is epihydrophilous while Zostera is hypohydrophilous
(III) Pollination in water lily / Lotus (Nymphea) and Eichhornia (water hyacinth) takes place by insects ~ v
(IV) In majority of aquatic plants flowers emerg above the level of water and are pollinated by insects or wind
(V) In most of the water pollinated species, pollen grains are protected from wetting due to absence of mucilaginous covering
(VI) In hydrophilous plants pollen grains are spherical
(a) All (b)None (c)VI (d)IV

45.
(I) Flowers are usually large, colourful, fragrant
(II) Pollen grains are produced in large number
(III) Pollen grains are light in weight and non-sticky
(IV) Sticky pollen grains
(V) Stigma rough and sticky
(VI) Stigma is feathery
Which of the above characters favour entomophily?
(a) II, IV, V (b) I, II, III (c)lll, IV, V (d)l,IV, V

46. Choose the correct statement from amongst the following:
(a) Dioecious (hermaphrodite) organisms are seen only in animals.
(b) Dioecious organisms are seen only in plants.
(c) Dioecious organisms are seen in both plants and animals.
(d) Dioecious organisms are seen only in vertebrates.

47. 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

48. Seeds are called products of semual reproduced because they-
(a) Give rise to new plants
(b) Are formed by fusion of gametes
(c) Can be stored for a long time
(d) Are formed by fusion of pollar tubes

49. The period from birth to the natural death of an organism represents-
(a) Reproductive phase (b) Life cycle
(c) Life span (d) Life style

50. The toxic agents present in food which interfere with thyroxin synthesis lead to the development of
(a) Toxic goiter (b) Cretinism

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(c) Simple goiter (d) Thyrotoxicosis

51. Listed below are the hormones of anterior pituitary origin. Tick the wrong entry

(a) Growth hormone
(b) Follicle stimulating hormone
(c) Oxytocin
(d) Adrenocorticotropic hormone

52. All the following tissues in mammals except one consist of a central 'medullary' region surrounded by a cortical region. Mark the wrong entry.

(a) Ovary (b) Adrenal
(c) Liver (d) Kidney

53. What will be the effect of removal of posterior pituitary?

(a) Oxytocin and ADH will not be synthesised
(b) Oxytocin and ADH will be synthesised but could not be stored
(c) Only oxytocin will be synthesised
(d) Only ADH will be synthesized

54. Resting axonal membrane is

(a) Unpolarized
(b) Unpolarized and more permeable to K+
(c) Polarized and more permeable to Na+
(d) Polarized and more permeable to K+

55. Internal ear is filled with

(a) Perilymph (b) Endolymph
(c) Lymph (d) Both (a) and (b)

56. In mammalian eye, the 'fovea' is the centre of the visual field, where

(a) The optic nerve leaves the eye
(b) Only rods are present
(c) More rods than cones are found
(d) High density of cones occur, but has no rods

57. Coordination is considered as an important process in an animal body because

(a) it helps to maintain homeostasis
(b) it enables different organs to interact and function efficiently.
(c) it ensures the normal functioning of vital organs.
(d) all of these

58. Each nephron consists of

(a) Glomerulus (b) Renal tubules
(c) Both (a) and (b) (d) Calyces

59. If Henle's loop were absent from mammalian nephron, which of the following is to be expected?

(a) The urine will be more dilute.
(b) There will be no urine formation.
(c) The urine will have more concentration.
(d) There will be hardly any change in the quality and quantity of urine formed.

60. Which of the following is true about ANF?

(a) Full form is Autonomic Nervous Factor
(b) Antagonistic to Renin–Angiotensin mechanism
(c) It causes vasoconstriction
(d) All are true

61. Vasa recta are minute vessel of peritubular capillaries network, which is

(a) also known as juxtaglomerular apparatus
(b) running parallel to loop of Henle
(c) running parallel to PCT
(d) running parallel to DCT

62. An adult human excretes on an average

(a) 2-3 litres of urine per day
(b) 1-1.5 litres of urine per day
(c) 2-5 litres of urine per day
(d) 4-5 litres of urine per day

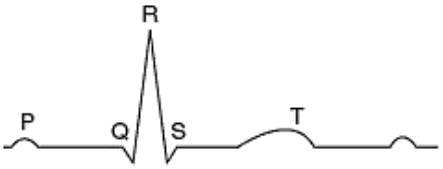
63. Erythroblastosis fetalis is

(a) HDN (b) Rh incompatibility
(c) Both (a) and (b) (d) None of these

64. The function of the cell fragments in blood (given in the diagram) is

(a) To resist infection
(b) To be responsible for immune response
(c) To help in clotting of blood
(d) To resist allergy

65. Given below is the ECG of a normal human. Which one of its components is correctly interpreted below?



(a) Complex QRS-one complete pulse
(b) Peak T-initiation of total cardiac contraction
(c) Peak P and peak R together – systolic and diastolic blood pressure
(d) Peak P – initiation of left atrial contraction only

66.

(I) Proteins contribute 6 - 8% of the blood plasma
(II) Plasma contains very high amount of minerals
(Ill) Plasma without the clotting factors is called serum
(IV) Glucose, amino acids, lipids, etc., are also present in the plasma as they are always in transit in the body.
Of the above statements -

(a) All are correct (b) Only II is false
(c) Only I is correct (d) All are false

67. Which of the following statements is wrong about the closed circulatory system?

(a) Blood remains within blood vessels and never comes in direct contact with the body cells
(b) In it flow of fluid can be more precisely regulated
(c) There is no blood capillary
(d) Blood flow is more rapid due to higher pressure

68. In mammals, voice is produced by

(a) Bronchus (b) Syrinx
(c) Larynx (d) Inhalation and exhalation

69. Each molecule of haemoglobin can carry at the maximum of _____ molecules of O_2.

(a) 1 (b) 2
(c) 3 (d) 4

70. The partial pressure of oxygen in the alveoli of the lungs is

(a) Les than that of carbon dioxide
(b) Less than that in the blood
(c) More than that in the blood
(d) Equal to that in the blood

71. The primary dentition in human differs from permanent dentition in not having one of the following type of teeth

(a) Premolars (b) Molars
(c) Incisors (d) Canine

72. Hepato–pancreatic duct opens into the duodenum and carries

(a) Bile (b) Pancreatic juice
(c) Both bile and pancreatic juice (d) Saliva

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73. Which cells of 'Crypts of Lieberkuhn' secrete antibacterial lysozyme?
(a) Argentaffin cells (b) Paneth cells
(c) Zymogen cells (d) Kupffer cells

74. Parotid glands are located below -
(a) Eye (b)Tongue
(c) Floor of mouth (d) In cheek near ear

75. Sigmoid curve is typical for which components of plant body?
(a) Cells (b) Tissue
(c) Organs (d) All of these

76. What is the phenomenon of dedifferentiation?
(a) Regaining the capacity to divide
(b) Loosing the capacity to divide
(c) Loosing the capacity to divide after regaining
(d) All of these

77. Gibberella fujikuroi causes what disease in rice plants?
(a) Foolish seeding (b) Bikaner
(c) Both (a) and (b) (d) None of these

78. Most widely used compound as a source of ethylene is
(a) nepthol (b) acetol
(c) ethephon (d) ethepcon

79. Which of the following relation shows substrate level phosphorylation?
(a) Citric acid → α-ketoglutaric acid
(b) Malic acid → oxaloacetic acid
(c) α-ketoglutaric acid → Succinyl-CoA
(d) Succinyl-CoA → Succinic acid

80. Which of the following is the correct sequence in Kreb's cycle?
(a) Isocitric acid → Oxalosuccinic acid → α–ketoglutaric acid
(b) Oxalosuccinic acid → Isocitric acid → α–ketoglutaric acid
(c) α–ketoglutaric acid → Isocitric acid → Oxalosuccinic acid
(d) Isocitric acid → α–ketoglutaric acid → Oxalosuccinic acid

81. What will happen to glycolytic pathway if a cell runs completely out of ATP -
(a) Glycolysis will speed up
(b) Glycolysis will be slow down
(c) Glycolysis will stop as first and third steps need ATP input
(d) Glycolysis will increase as energy will be supplied by NADH2

82. Where is ATP synthesized in glycolysis?
(a) When 1, 3 di PGA is changed into 3 PGA
(b) When PEPA is changed into pyruvic acid
(c) When Fr. 1, 6 di P is broken in Triose phosphate (2 molecules)
(d) Both a and b

83. Which of the following is incorrect about NH_4+ ion?
(a) It is formed by the protonation of NH_3.
(b) Less toxic so it can be accumulated in plants.
(c) It is used to synthesize amino acid in plants.
(d) All the above

84. With regard to the Biological Nitrogen Fixation by Rhizobium in association with soyabean, which one of the following statement/statements does not hold true
(a) Nitrogenase may require oxygen for its functioning
(b) Nitrogenase is Mo–Fe protein
(c) Leghaemoglobin is a pink coloured pigment
(d) Nitrogenase helps to convert N2 gas into two molecules to ammonia.

85. Deficiency of which mineral causes deficiency of N -
(a) Mo (b) K (c) Mn (d) s

86. Examples of bulk flow by a positive hydrostatic pressure gradient and a negative hydrostatic pressure gradient
(a) suction through straw and swelling of wood, respectively
(b) imbibition and a garden hose
(c) garden hose and suction through a straw, respectively
(d) swelling of wood and imbibition, respectively

87. The barrier inside the root that prevents water from leaking out of the vascular tissue is the -
(a) Epidermis (b) Casparian strip
(c)Apoplast (d) Root hairs

88. The movement of water from one cell of the cortex to the adjacent one in roots is due to
(a) accumulation of inorganic salts in the cells.
(b) accumulation of organic compounds in the cells.
(c) chemical potential gradient.
(d) water potential gradient.

89. Monomeric unit of inulin is
(a) Glucose (b) Fructose
(c) Mannose (d) Ribose

90. The most common monomer of carbohydrates is a molecule of -
(a) Glucose (b) Fructose
(c) Ribose (d) Deoxyribose

91. If the '*R*' group in a proteinaceous amino acid is hydroxy methyl, the amino acid is
(a) Glycine (b) Alanine
(c) Serine (d) Proline

92. Who showed that virus can be crystallized out?
(a) Ivanowsky (b) Beijerinck
(c) Stanley (d) Pasteur

93. Viruses have proteins and
(a) ds DNA or ss RNA (b) ss RNA or ds RNA
(c) DNA and RNA (d) ds or ss RNA / DNA

94. The characteristics of growth include
(a) increase in mass (b) increase in number
(c) increase in length (d) both(a) and (b)

95. Which one of the following is used as vector for cloning genes into higher organisms?
(a) Baculovirus (b) Salmonella typhimurium
(c) Rhizopus nigricans (d) Retrovirus

96. The site of production of ADA in the body is
(a) Erythrocytes (b) Lymphocytes
(c) Blood plasma (d) Osteocytes

97. Match the following columns.

Insects pest class	Insects
(A) Lepidopterans	**(1)** Tobacco, budworm and armyworm
(B) Coleopterans	**(2)** Beetles
(C) Dipterans	**(3)** Flies and mosquitoes

Codes

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

98. What is indicated by 'd' in the figure?

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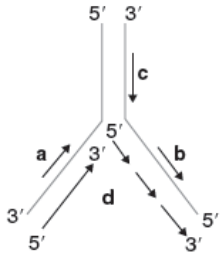

(a) Continuous synthesis (b) Newly synthesized strands
(c) Template DNA (d) Discontinuous synthesis

99. Consider the following statements.
I. *r*RNAprovides the template for synthesis of proteins.
II. *t*RNAbrings amino acids and reads the genetic code.
III. RNApolymerase binds to promoter and initiates transcription.
IV. Asegment ofDNAcoding for polypeptide is called intron.
Which of the statements given above are correct?
(a) I and III (b) I and II
(c) I, II and III (d) II and III

100. The length of DNA has 45000 base pairs. How many complete turns will the DNA molecule take?
(a) 55000 (b)350
(c)4500 (d)35

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