

MHT-CET Practice Question Paper

Subject : Biology

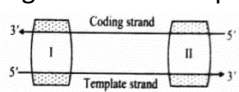
Time: 25 minutes

Test no : 04

Marks : 100

All the questions are compulsory and contain two marks for each

- Stock and scion are used in
 - cutting
 - grafting
 - layering
 - micropropagation
- In angiosperms, a male gametophyte is developed from a pollen mother cell by _____.
 - once meiotic and two mitotic divisions
 - two mitotic divisions
 - one mitotic and two meiotic divisions
 - a single meiotic division
- Assertion (A):** Cellular thickenings at the micropylar tip guide the pollen tubes into the synergids.
Reason (R): Synergids have antipodals located at the chalazal end.
 Which of the following is true?
 - Both (A) and (R) are true and (R) is the correct explanation of (A)
 - Both (A) and (R) are true, but (R) is not the correct explanation of (A).
 - (A) is true, but (R) is false.
 - (A) is false, but (R) is true.
- Functional megaspore in an angiosperm develops into
 - ovule
 - endosperm
 - embryo sac
 - embryo
- Which one of the following is NOT true about self-pollination?
 - A sure method
 - Most economic
 - Maintains genetic purity
 - Favors evolution
- What is the outbreeding device, where the stamens and carpels mature at different times called?
 - Monoecy
 - Self sterility
 - Dichogamy
 - Heterostyly
- Which one of the following cells secretes a hormone?
 - Cells of Leydig
 - Cells of Sertoli
 - Primary spermatocyte
 - Secondary spermatocyte
- During menstrual cycle, the cyclic changes takes place in
 - Perimetrium
 - Endometrium
 - Corpus luteum
 - Myometrium
- During embryonic development, after third Cleavage the number of blastomeres formed will be _____.
 - 8
 - 10
 - 16
 - 6
- Select the CORRECT pair of endodermal derivatives.
 - Adrenal medulla - Dermis of skin
 - Lungs- Thyroid gland
 - Lymphatic vessel -Vagina
 - Retina - Tonsil
- Several hormones like hCG hPL, estrogen. progesterone are produced by
 - pituitary
 - ovary
 - placenta
 - fallopian tube
- Forceful muscular contractions of uterine wall is involved in
 - Implantation
 - Lactation
 - Micturition
 - Parturition
- Two alternative forms of a gene or alleles are located on _____.
 - identical loci of the same chromosome
 - non-identical loci of the same chromosome
 - identical loci of homologous chromosome

- d) non-identical loci of homologous chromosomes
14. The genotypes of a husband and wife are I^AI^A and I^Ai. Among the blood types of their children, how many different genotypes and phenotypes are possible?
- 3 genotypes; 3 phenotypes
 - 3 genotypes; 4 phenotypes
 - 4 genotypes; 3 phenotypes
 - 4 genotypes; 4 phenotypes
15. Total number of linkage groups in honeybee is ____.
- 16
 - 23
 - 32
 - 46
16. Which of the following most appropriately describes haemophilia?
- Chromosomal disorder
 - Dominant gene disorder
 - Recessive gene disorder
 - X- linked recessive gene disorder
17. Which scientist experimentally proved that DNA is the sole genetic material in bacteriophage?
- Jacob and Monod
 - Beadle and Tatum
 - Meselson and Stahl
 - Hershey and Chase
18. Nucleosome contain
- only histone protein
 - both DNA and histone protein
 - only DNA
 - both DNA and RNA.
19. During DNA replication, the addition of nucleotides on the lagging strand occurs
- towards the replicating fork
 - at a faster rate than leading strand
 - continuously
 - discontinuously
20. In the given transcription unit, identify the regions I and II respectively.
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- Promoter and Terminator
 - Rho factor and Sigma factor
 - Terminator and Promote
 - Operator and Inhibitor
21. Variation in gene frequencies within population can occur by change rather than by natural selection. This is referred to as
- Genetic flow
 - Genetic drift
 - Random mating
 - Genetic load
22. Molecular evolution and origin of life occurred in ____ era.
- Archaeozoic
 - Cenozoic
 - Palaeozoic
 - Proterozoic
23. Flaccid cell means
- Plasmolysed cell
 - Cell with turgidity
 - The cell in which water flows in and out of cell are in equilibrium
 - The cell kept in hypotonic solution
24. Guttation occurs through
- roots
 - hydathode
 - trichome
 - stomata
25. The *Avena* curvature is used for bioassay of
- IAA
 - Ethylene
 - ABA
 - GA₃
26. Vernalization promotes flowering by
- low temperature
 - high temperature
 - prolonged photoperiod
 - short photoperiod
27. The maximum volume of air a person can breathe in after a forced expiration is known as:
- Total Lung Capacity
 - Expiratory Capacity
 - Vital Capacity
 - Inspiratory Capacity
28. Which one of the following is CORRECT?
- Plasma Blood - Lymphocytes
 - Serum = Blood + Fibrinogen
 - Lymph = Plasma + RBC WBBC
 - Blood = Plasma RBC + WBC - Platelets
29. In case of severe allergy and cough. the physician advises the patient to get the blood checked. What is expected in the

- blood smear report?
- a) Leukemia b) Eosinophilia
c) Polycythemia d) Leucopenia
30. Atrial systole lasts for ____ in cardiac cycle
a) 0.1 second b) 0.3 second
c) 0.5 second d) 0.7 second
31. The corpus callosum interconnects
a) Cerebral hemispheres
b) Cerebellar hemispheres
c) Corpora quadrigemina
d) Crura Cerebri
32. The transparent lens in the human eye is held in its place by
a) smooth muscles attached to the iris
b) ligaments attached to the iris
c) ligaments attached to the ciliary body
d) smooth muscles attached to the ciliary body
33. Organ of Corti is located on the ____.
a) Basilar membrane
b) Basement membrane
c) Reissner membrane
d) Synovial membrane
34. The diurnal rhythms are regulated by ____.
a) Adrenalin b) Melatonin
c) Serotonin d) Vasopressin
35. Plasma cells are derived from
a) Cytotoxic T-cells b) Helper T -cells
c) Memory B -cells d) Memory T-cells
36. Intermediate host of malarial parasite is
a) Pig b) Man
c) Mosquito d) Larva of Mosquito
37. High levels of aspartic acid, low nitrogen and sugar content in maize plants prevent the attack by _____.
a) Aphids b) Jassids
c) Boll worms d) Stem borers
38. *Hissardale* is obtained by crossing
a) Horse with donkey
b) Marino ewes with Bikaneri Rams.
c) Superior bull with superior cow
d) Bikaneri ewes with Marino Rams
39. The initial step in preparation of beer is
a) malting b) carboxylation
c) clarification d) distillation
40. During PCR technique, the pairing of primers to ssDNA segment is called
a) Denaturation b) Annealing
c) Polymerisation d) Isolation
41. Vaccine contains
a) Only formulation chemicals
b) A medicine that suppresses immune system
c) A disease causing inactivated microorganism
d) A chemical that suppresses host DNA
42. Which one of the following gene becomes the marker gene in transgenic plants developed by using *Agrobacterium tumefaciens*?
a) nitrogen fixing gene
b) tumour producing gene
c) toxin producing gene
d) nodule producing gene
43. Some multinational companies have exploited the traditional knowledge of the indigenous people to produce commercially important bio products without their consent. This is an example for
a) Biopatent b) Bioprospecting
c) Biopiracy d) Bioremediation
44. A gene whose expression helps to identify transformed cell is known as
a) Selectable marker b) Vector
c) Plasmid d) Structural gene
45. In gene therapy, _____ can be treated by gene DNase.
a) Pituitary dwarfism
b) Hepatitis - B
c) Haemophilia
d) Cystic fibrosis
46. Natality refers to
a) Number of individuals leaving the habitat
b) Birth rate
c) Death rate
d) Number of individuals entering a habitat
47. If '+' sign is assigned to beneficial interaction, '-' sign to detrimental and '0' sign to neutral interaction, then the population interaction represented by '+' '-'

refers to

- a) Parasitism
- b) Mutualism
- c) Amensalism
- d) Commensalism

48. Gross primary productivity is the rate of production of ____ during photosynthesis.
- a) organic matter
 - b) oxygen
 - c) carbon dioxide
 - d) chlorophyll
49. Earthworm is a
- a) herbivore
 - b) secondary consumer
 - c) tertiary consumer
 - d) detritivore
50. Which one of the following is NOT a method of *in situ* conservation of biodiversity?
- a) Botanical garden
 - b) Sacred grove
 - c) Biosphere reserve
 - d) Wildlife sanctuary