

MHT-CET 2023 Practice Question Paper

Subject : Biology

Time: 25 minutes

Test no : 02

Marks : 100

All the questions are compulsory and contain two marks for each

1. Identify the asexual reproductive structure 'M' in the following diagram.



- a) Zoospore b) Bud
c) Gemmule d) Conidium
2. Pollen grain develops from ____ of anther.
a) epidermis b) endothecium
c) tapetum d) Sporogenous tissue
3. The exine of pollen grain is made up of
a) chitin b) cellulose
c) sporopollenin d) hemicellulos
4. The number of synergids and antipodals present in a typical angiosperm embryo sac at maturity respectively are
a) two and three b) one and three
c) three and two d) one and two
5. In angiosperms, megaspores formed after meiosis of megaspore mother cell are arranged in ____
a) Isobilateral tetrad b) Linear tetrad
c) Tetrahedral tetrad d) T-shaped tetrad
6. Environmental biotic factor that helps in pollination is
a) air b) water
c) wind d) insects
7. Regeneration as a method of asexual reproduction is observed in.
a) Ascaris b) Planaria
c) Prawn d) Salmonella
8. Which one of the following generates new genetic combinations leading to variation?
a) Nucellar polyembryony
b) Vegetative reproduction
c) Parthenogenesis
d) Sexual reproduction
9. "Testes are extra-abdominal in position". Which of the following is most appropriate reason?
a) Narrow pelvis in male
b) Special protection for testis
c) Prostate gland and seminal vesicles occupy maximum space
d) 2.0- 2.5°C lower than the normal body temperature
10. Oogonia arise from the endoderm of the ____
a) allantois b) chorion
c) trophoblast d) yolk sac
11. Which of the following cells during gametogenesis is normally diploid?
a) Primary polar body
b) Spermatid
c) Spermatogonia
d) Secondary polar body
12. During entry into the ovum, acrosome of sperm releases
a) Hyaluronidase
b) Alkaline phosphatase
c) Acid Phosphatase
d) Carbonic anhydrase
13. How many pairs of contrasting characters in pea plants were studied by Mendel in his experiments?
a) Five b) Six
c) Eight d) Seven
14. During a dihybrid cross with contrasting characters in the F₂ generation parental genotypes will appear in ____ ratio.
a) 1/16 b) 2/16
c) 3/16 d) 9/16
15. In a dihybrid cross with contrasting characters, the number of different

- genotypes obtained in F2 generation are ____.
- a) 16 b) 9 c) 6 d) 4
16. When two homozygous plants with red and white flowers are crossed, their offsprings show pink flowers. This indicates that the alleles of the gene for flower colour shows ____.
- a) Incomplete dominance
b) Epistasis
c) Complete dominance
d) Co-dominance
17. Transformation was discovered by
- a) Meselson and Stahl
b) Hershey and Chase
c) Griffith
d) Watson and Crick
18. A typical nucleosome "bead" is made up of
- a) 8 histone molecules and 146 base pairs of DNA
b) 8 histone molecules and 200 base pairs of DNA
c) 4 histone molecules and 146 base pairs of DNA
d) 4 histone molecules and 200 base pairs of DNA
19. Polymerization of DNA nucleotides during the synthesis of lagging strand occurs in
- a) 3' → 5' direction
b) 5' → 3' direction
c) any direction
d) promoter to terminator direction
20. If E coli is allowed to grow for 40 minutes in a medium containing N¹⁵, then the number of N¹⁴. N¹⁴ containing DNA would be
- a) 0 b) 20
c) 10 d) 2
21. The most common chemical compounds formed in Urey-Miller's experiment were
- a) amino acid b) ammonia
c) methane d) vitamins
22. When members of a population attain sexual maturity at different times preventing inter-breeding, it is termed as ____ isolation.
- a) seasonal b) mechanical
c) habitat d) ethological
23. Arrange the following in the pathway of water movement in the root.
- i. Cortex ii. Epidermis
iii. Pericycle iv. Endodermis
- The correct answer is
- a) i, ii, iv, iii b) ii, i, iv, iii
c) ii, iii, i, iv d) i, ii, iii, iv
24. Continuous upward flow of water stream in tall trees is maintained due to ____.
- a) guttation and transpiration
b) transpiration pull only
c) cohesive force between molecules only
d) cohesive force between molecules and transpiration pull
25. Dr. F. Went noted that if coleoptile tips were removed and placed on agar for one hour, the agar would produce a bending when placed on one side of freshly cut coleoptile stumps. Of what significance is this experiment?
- a) It made possible the isolation and exact identification of auxin.
b) it is the basis of quantitative determination of small amounts of growth-promoting substances
c) It supports the hypothesis that IAA is auxin
d) It demonstrated polar movement of auxins.
26. If a plant produces flowers when exposed only to alternating periods of 5 hours light and 3 hours dark in a 24-hour cycle, then the plant should be a ____.
- a) Short day plant
b) Long day plant
c) Short-long day plant
d) Day neutral plant
27. The structure which prevents the entry of food into respiratory tract is
- a) Pharynx b) Larynx
c) Glottis d) Epiglottis
28. The volume of air inspired or expired by a healthy man per minute is
- a) 1000ml – 1100ml
b) 2500ml – 3000ml
c) 6000ml – 8000ml
d) 400ml – 500ml

29. Name the pulmonary disease in which alveolar surface area involved in gas exchange is drastically reduced due to damage in the alveolar walls
- a) Asthma b) Pleurisy
c) Emphysema d) Pneumonia
30. The heart is covered by
- a) epicardium b) pericardium
c) supracardium d) endocardium
31. Visual information is decoded by
- a) Occipital lobe
b) Temporal lobe
c) Parietal lobe
d) Frontal lobe
32. Which one of the following is NOT a refractive medium of the eye?
- a) lens
b) vitreous humour
c) aqueous humour
d) pupil
33. Which is the inhibitory hormone of GH?
- a) Insulin b) Parathormone
c) Somatostatin d) Testosterone
34. Which one of the following secretes glucagon?
- a) Beta (β) cells of islets of Langerhans
b) Alpha (α) cells of islets of Langerhans
c) Acidophilic cells of adenohypophysis
d) Basophilic cells of adenohypophysis
35. Introduction of attenuated pathogens in human body results in ____.
- a) Artificial acquired active immunity
b) Artificial acquired passive immunity
c) Natural acquired active immunity
d) Natural acquired passive immune
36. AB blood group was discovered by
- a) Decastello and Sturli
b) Karl Landsteiner
c) William Harvey
d) Wallace Alfred
37. Which one of the following disease is caused by bacteria?
- a) Red rot of sugarcane
b) Black rot of crucifers
c) Brown rust of wheat
d) Late blight of potato
38. The pH of nutrient medium in plant tissue culture is adjusted between
- a) 3 - 4 b) 4.1 - 4.8
c) 5 - 5.8 d) 6 - 7
39. The breeding technique that is useful to expose harmful recessive genes is
- a) outbreeding
b) artificial insemination
c) inbreeding
d) MOET
40. H. Boyer and S. Cohen are famous for their research work on
- a) Structure of double stranded DNA
b) Construction of the first artificial DNA molecule
c) Discovery of restriction enzymes
d) Invention of Polymerase Chain Reaction
41. DNA polymerase enzyme is isolated from which bacteria?
- a) E. coli
b) Thermus aquaticus
c) Bacillus thuringiensis
d) Agrobacterium
42. Tissue Plasminogen Activator (TPA) is used to
- a) reverse blood clot
b) Promote formation of new blood vessels
c) treat pituitary' dwarfism
d) treat haemophiliacs
43. Genetically engineered bacteria can accelerate the ____.
- a) degradation of oil pollutant
b) wound healing
c) reversal of blood clot in coronary artery
d) growth of cattle and improving dairy yield
44. Which vector can clone only a small fragment of DNA?
- a) Bacterial artificial chromosome
b) Yeast artificial chromosome
c) Plasmid
d) Cosmid
45. Cystic fibrosis can be treated by ____ in gene therapy
- a) TGF- B b) TPA
c) DNase d) BGH

46. In an ecosystem each organism occupies a particular place and has a functional role it is known as
- Habitat
 - Ecotone
 - Ecological Niche
 - Ecological Pyramid
47. World Ozone Day is celebrated on
- 16th September
 - 21st April
 - 5th July
 - 22nd April
48. The term ecosystem was coined by
- E. Haeckel
 - E. Warming
 - E.P. Odum
 - A.G. Tansley
49. Of the total incident solar radiation, the percentage Photosynthetically Active Radiation (PAR) captured by plants
- 10 – 20% of PAR only
 - 2 - 10 % of PAR only
 - 0 - 10% of PAR only
 - 30 - 40 % of PAR only
50. How many hot spots of biodiversity in the world have been identified till date by Norman Myers?
- | | |
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| a) 43 | b) 17 |
| c) 25 | d) 34 |