

Life Science Dec 2023

Memory Based Ques Shift 1 & 2



Shift 1

1. Pedigree: parent male and female (both unaffected) but progeny (2 female 1 male) all affected..

1) mutation in the egg of female parent,

2) X linked disease

3) autosomal

2. Order of relatedness in Human orangutan gibbon gorilla chimpanzee

3. Smallest phase in cell cycle

4. Largest flowering family

5. Lysine or fertilizin for cell penetration

6. Biological species concept

7. Which plant family has more species?

8. Ecosystem term was given by

9. Kaposi's sarcoma is caused by which virus

A. HIV

B. HHV-8

C. HPV

D. HTLV

10. Amount of hemoglobin in 1 molecule

11. The electromagnetic reaction caused by the biomolecular NMR spectroscopy

A. radio wave

B. Microwave

C. X-ray

12. High net primary production in terrestrial ecosystem
13. Sorensen similarity index
14. If a population of arb- bacteria that cannot survive on arabitose medium at 42 degree but the same population survive at 37 degree Celsius . What type of mutation is this:
 - A. Deletion,
 - B. frame shift
 - C. Inversion
15. Gene express in All four whorls 1.Ap1 (b)Ap2 (c)Ap3 (d)Ag
16. During cell culture which of the following is not treated by trypsin.
17. Gastric pH 2 and endocytic vesicles pH is 5.2 . the H^+ of vesicle is lower than that of gastric by
18. Amount of hemoglobin in pecogram in RBC
19. Which secondary metabolites synthesis Methionine
20. What countries come under Gondwana?
21. Which technique is used in protein- DNA, DNA-DNA, DNA-RNA interaction
 - A. ChIP
 - B. southwestern blotting
 - C phase display
22. Which speciation will be shown in Lizard population in Indian peninsular region
 - A. Parapatric
 - B. Allopatric

C. Sympatric

23. A protein segment contains

1. An alpha helix
2. Disrupted helix and
3. beta sheet.

If the total length of each protein segment is approximately 300 amino acids, what would be its estimated length in angstroms?

24. In a cation exchange chromatography experiment, a mixture containing three different peptides is passed through a cation exchange column. The peptides are:

- A) Ala-Asp-Glu
- B) Ser-Arg-Arg
- C) Gly-Ser-Arg

Considering the amino acid composition of these peptides, which of the following best describes the expected elution order of these peptides from the column?

1. A, B, C
2. C, B, A
3. B, A, C
4. C, A, B

25. Chymotrypsin digestion of a pentapeptide produced a dipeptide and a tripeptide.

CNBr cleavage of the same pentapeptide yielded a tripeptide and a dipeptide.

Trypsin does not produce any fragments.

Which of the following sequences fits the pentapeptide?

26. Glycolysis is inhibited by which of the following inhibitor

- Glucose 6 P
- Citratec
- AMP
- ATP
- ADP

27. pH of the endocytic vesicle is 5.2 and stomach is 2. Difference between number of H^+ ions

1. 1585 times lower in vesicle than stomach
2. 1585 times lower in stomach than vesicle
3. 15.85 times lower in stomach than vesicle.
4. 15.85 times lower in vesicles than stomach.

28. Match the organelles with subcellular markers.

- | | |
|---------------|--------------------------|
| 1. lysosome | a. Lactate dehydrogenase |
| 2. Cytoplasm | b. Acid phosphatase |
| 3. Peroxisome | c. Catalase |

29. Porins are present on the outer membrane of mitochondria Choose correct statement.

1. Synthesized on ER membrane and transported to mitochondria through clathrin coated vesicles.
2. Synthesized on mitochondrial membrane
3. Synthesized in cytosol and transferred through TOM to the outer membrane

4. Synthesized in cytosol and transferred through TIM

30. Choose the correct statement about rolling circle replication, a mechanism of DNA replication:

1. It is unidirectional and requires a single replication fork.
2. Escherichia coli O157:H7 uses this mechanism for the replication of its double-stranded DNA.
3. Escherichia coli uses this mechanism for the replication of its chromosomal DNA.
4. In this type of replication, the leading strand is not synthesized.

31. Kaposi sarcoma is a type of cancer often associated with a specific virus. Which virus is known to cause Kaposi sarcoma?

1. Human T-lymphoTropic Virus (HTLV)
2. Human Papillomavirus (HPV)
3. Hepatitis C Virus (HCV)
4. Human Herpesvirus

32. Which enzyme is crucial for sperm to penetrate the egg's outer layers and facilitate fertilization in Jellyfish?

1. Lysine
2. Hyaluronic acid
3. Lysine hyaluronidase
4. Hyaluronidase

Shift 2

1. Grazing food chain will get its Maximum NPP from
 1. Tropical rainforest
 2. Algal bead..
 3. Open ocean.
2. Sedimentation coefficient of freshly extracted protein was 1.83 left for 2 days and now it's 2.4.what could be possible reason
 1. formed octamer
 2. homodimer
 3. bound with buffer molecules
 4. degraded
3. Trna what is charged and what interacts with mrna
 - 1) 3' end D loop
 - 2) 5' end t loop
 - 3) 3' end anticodon loop
4. Which of the following does not accumulate in biomagnification?
 1. MercurY
 2. Phosphate
 3. POPs
 4. Arsenic
5. Which of the following bioaccumulate in trophic level or biomagnify:
 1. Mercury
 2. Selenium
 3. Persistent orangutans
 4. Potassium.

6. Which mRNA can leave the nucleus
 1. spliced capped tailed
 2. unspliced tailed capped
 3. uncapped spliced tailed
7. Which of the classes of vertebrate are more threatened to extinct
 1. Reptile
 2. Birds
 3. Mammal
 4. Amphibians
8. Energy gain from food 1000kj, out of which 500 lost as feces, 350 respiration, 150 growth then what is the efficiency
9. Spirally arrangements of rod cells in the presence of light.
 1. Rhodopsin activation
 2. Phosphodiesterase activation
 3. cGMP decrease
 4. Hyperpolarization
10. What will happen if the cell crosses the restriction point in the cell cycle.
 1. low cyclin B level
 2. decrease in APC level
 3. condensed Chromosome
 4. non phosphorylated retinoblastoma
11. Western ghats hotspot are rich in
 1. endemism
 2. biodiversity

3. habitat loss

12. Fishs marked then released and the collected 50 from which 15 were already marked. Total population is?



CSIR NET EXAM

**CSIR NET Life Sc.
2024
BATCH - 1**



**English- 5 Jan
Bilingual- 10 Jan**