

ICMR JRF Question paper 2012(memory based)

1. Which of the following organelle
is involved in photorespiration?

- a) Peroxisomes
- b) Ribosomes
- c) Glyoxysomes
- d) Dictyosomes

2. Which of the following is regarded as the "Living fossil"?

- a) Cycas
revoluta
- b) Ginkgo biloba
- c) Taxus
brevifolia
- d) Rhynia

3. What is the physiological pH of human beings?

- a) 7
- b) 6.8
- c) 7.8
- d) 7.4

4. Which of the following is a non ionizing radiation?

- a) UV
- b) X-ray
- c) Beta
- d) Gamma

5. BLOSUM stands for

- a) Blocks amino acid substitution matrix
- b) Basic local substitution matrix
- c) Biological substitution matrix
- d) Biological subtraction
matrix

6. Brass is an alloy of

- a) Cu and Zn
- b) Cu and Ag
- c) Zn and Ag
- d) Zn and Fe

7. Which of the following is non-mutagenic?

- a) Acridine
- b) IR
- c) UV
- d) X-ray

8. Spontaneous theory of generation was disproved by

- a) Louis Pasteur
- b) Aristotle
- c) Van Helmont
- d) John Needham

9. Acid rain is due to

- a) NO₂
- b) CO₂

- c) SO₂
- d) H₂SO₄

10. Which of the following is the best conductor of electricity

- a) rain water
- b) sea water
- c) boiled water
- d) distilled water

11. The unit of radioactive decay constant

- a) Rontgen
- b) Rad
- c) Ram
- d) Ampere

12. Spirulina is rich in

- a) Carbohydrates
- b) Fats
- c) Proteins
- d) Vitamins

13. The technology that involves silencing of transcriptional RNA

- a) RNA interference
- b) Antisense technology
- c) RNA blocking
- d) Transcriptional inactivation

14. Non essential amino acids include

- a) methionine, lysine, leucine
- b) alanine, aspartate glutamate
- c) threonine, valine, Histidine
- d) isoleucine, valine, histidine

15. DNA foot printing is a technique for identifying

- a) DNA-DNA binding
- b) DNA-RNA binding
- c) Protein-DNA binding
- d) Protein- RNA binding

Receptors for steroid hormones are found

- a) on plasma membrane
- b) cytoplasm
- c) in mitochondria
- d) on ribosomes

HIV virus attacks

- a) B cells

- b) TH cells
- c) Tc cells
- d) Macrophages

Set of genes that are originated by gene duplication

- a) homologous genes
- b) orthologous genes
- c) epilogous genes
- d) paralogous genes

Chromatin is made up of repetitive units known as

- a) chromosome
- b) nucleotides
- c) chromonemata
- d) nucleosomes

During photosynthesis, evolution of oxygen is from

- a) H₂O
- b) CO₂
- c) glucose
- d) chlorophyll

Which class of RNA characteristically contains methylated purines and pyrimidines?

- a. tRNA
- b. mRNA
- c. rRNA
- d. 16sRNA

K_m of any enzymatic reaction describes:

- a. Reaction velocity expressed as mols per second

- b. Dissociation constant of E-S complex
- c. Amount of the enzyme required to convert half of the substrate to E-S complex
- d. Substrate concentration to achieve half of V_{max}

A Codon consists of:

- a. One molecule of amino acyl-t RNA
- b. Two complementary base pairs
- c. Three consecutive nucleotide units
- d. Three individual nucleotides

One mmol of NaCl contains:

- a. 35.5 g
- b. 35.5 mg
- c. 58.5 g
- d. 58.5 mg

Piezoelectric crystals are used in:

- a. NMR imaging
- b. Crystallography
- c. Ultrasonography
- d. Xeroradiography

Nuclear Magnetic Resonance Imaging technique is based on the gyromagnetic property of:

- a. Neutron
- b. Electron
- c. Proton
- d. Positron

Hydrogen-3 is a pure:

- a. Alpha emitter

- b. Gamma emitter
- c. Beta emitter
- d. Positron emitter

When a positron is emitted from a radio isotopic atom, the atomic number of the daughter product:

- a. Increases by one
- b. Decreases by one
- c. Decreases by two
- d. No change

Which law states that: At constant temperature, the volume of a given quantity of any gas is inversely proportional to the pressure upon the gas?

- a. Boyle's law
- b. Charle's law
- c. Henry's law
- d. Dalton's law

Western blot is a technique used for:

- a. Protein expression
- b. DNA expression
- c. RNA expression
- d. Fat expression