

LIFE SCIENCES

Paper – II

1. When data is processed or converted to some meaningful form, it is called
 - (A) ALU
 - (B) CPU
 - (C) Information
 - (D) Exponentiation.
2. The programs that direct the computer in its own internal operations are called
 - (A) system hardware
 - (B) system program
 - (C) application program
 - (D) data bus.
3. The communication between the CPU and external module takes place via the
 - (A) address bus only
 - (B) data bus only
 - (C) address and data buses
 - (D) control bus only.
4. Disk and tape drives are commonly used as
 - (A) soft copy
 - (B) secondary storage devices
 - (C) primary storage devices
 - (D) operating system.
5. The program which translates high level language program into machine language program is termed as
 - (A) compiler
 - (B) source program
 - (C) object program
 - (D) application program.

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6. Lysosomes are known as 'suicidal bags' because of
- (A) catalytic activity
 - (B) hydrolytic activity
 - (C) parasitic activity
 - (D) food vacuole.
7. Which one of the following is highly tolerant to salt stress (salinity) ?
- (A) *Allium cepa*
 - (B) *Beta vulgaris*
 - (C) *Zea mays*
 - (D) *Citrus limon*.
8. In which of the following structures *P*-cells are found ?
- (A) Vena cava
 - (B) SA node and AV node
 - (C) Bundle of His
 - (D) Ventricular myocardium.
9. The complement complex $\overline{C3bBb}$ is known as
- (A) classical pathway C3 convertase
 - (B) classical pathway C5 convertase
 - (C) alternative pathway C3 convertase
 - (D) alternative pathway C5 convertase.
10. Which one of the following *g* value in a centrifugation is required for deposition of the plasma membrane, fragments of the endoplasmic reticulum and large polyribosomes ?
- (A) 300,000 $g \times 2h$
 - (B) 600 $g \times 10$ minutes
 - (C) 100,000 $g \times 60$ minutes
 - (D) 15,000 $g \times 5$ minutes
11. The only known *nickel containing enzyme* in higher plant is
- (A) ATP sulfurylase
 - (B) Lipoxygenase
 - (C) Cytochrome P450
 - (D) Urease.

12. Which one of the following is *not* found in mitochondrial matrix ?
- (A) Single-stranded DNA
 - (B) Double-stranded DNA
 - (C) RNA
 - (D) Ribosome.
13. Distance between the neighbouring base pairs of DNA is
- (A) 3.4 Å
 - (B) 34 Å
 - (C) 19.8 Å
 - (D) 340 Å.
14. Which of the following viruses is used for biocontrol of insect pests of plants ?
- (A) Cauliflower mosaic virus
 - (B) Rice tungro virus
 - (C) Cucumber mosaic virus
 - (D) Nuclear polyhedrosis virus.
15. A marine fish maintains its osmoregulation by the way of
- (A) excreting water
 - (B) excreting salts
 - (C) producing concentrated urine
 - (D) activating chloride cells.
16. In C_4 plants the enzyme responsible for primary fixation of CO_2 is
- (A) RuBP carboxylase
 - (B) Deoxycarboxylase
 - (C) PEP carboxylase
 - (D) All of these.
17. Through which foramen CSF passes from lateral ventricles to the third ventricle ?
- (A) Foramen of Monro
 - (B) Foramen of Luschka
 - (C) Foramen of Magendie
 - (D) Foramen Magnum.

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18. When a heterozygous offspring is crossed with the homozygous recessive, the cross is called
- (A) reciprocal cross
 - (B) back cross
 - (C) test cross
 - (D) criss-cross.
19. Which one of the following species is the causative agent of Cutaneous leishmaniasis ?
- (A) *Leishmania donovani*
 - (B) *Leishmania chagasi*
 - (C) *Leishmania tropica*
 - (D) *Leishmania infantum*.
20. Matter and energy in the food chain run in parallel
- (A) upto carnivore level
 - (B) upto herbivore level
 - (C) upto decomposer level
 - (D) upto nutrient pool level.
21. Kisspeptin-GPR54 axis is involved in the regulation of
- (A) Thyroxine secretion
 - (B) ACTH secretion
 - (C) Puberty onset
 - (D) Insulin secretion.
22. Which one of the four useful dyes for fluorescent staining, emits green light ?
- (A) Rhodamine
 - (B) Texas Red
 - (C) FDA
 - (D) Cy 3.
23. The overall shape of Z-DNA is
- (A) short and wide
 - (B) short and narrow
 - (C) elongated and narrow
 - (D) elongated and wide.

24. The mechanism by which plants are protected against bacterial disease is called
- (A) amensalism
 - (B) parasitism
 - (C) commensalism
 - (D) antagonism.
25. Which one of the following is the correct sequence of the regions of embryonic brain in vertebrates ?
- (A) Mesencephalon, Diencephalon, Rhombencephalon, Telencephalon
 - (B) Diencephalon, Mesencephalon, Rhombencephalon, Telencephalon
 - (C) Telencephalon, Diencephalon, Mesencephalon, Rhombencephalon
 - (D) Rhombencephalon, Telencephalon, Mesencephalon, Diencephalon.
26. Nitrates are converted into nitrogen by
- (A) Dentrifying bacteria
 - (B) Nitrifying bacteria
 - (C) Ammonifying bacteria
 - (D) Nitrogen fixing bacteria.
27. Cholagogues are the substances that
- (A) increase bile secretion
 - (B) cause contraction of gall bladder
 - (C) cause dilatation of colon
 - (D) increase intestinal secretion.
28. The mammary gland of primate is an example of
- (A) simple tubular gland
 - (B) compound tubular gland
 - (C) simple tubuloalveolar gland
 - (D) compound alveolar gland.
29. Inflection point in a population growth curve is represented by
- (A) K
 - (B) $K/2$
 - (C) r
 - (D) J.

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30. The first appearance of amphibians on earth was during the period
- (A) Devonian
 - (B) Carboniferous
 - (C) Triassic
 - (D) Jurassic.
31. The resolution of electron microscope is higher than optical microscope because of
- (A) larger aperture
 - (B) smaller wavelength of electrons
 - (C) greater wavelength of electrons
 - (D) smaller focal length of the lens.
32. Multiple forms of enzymes with the same catalytic activity but with different structures are called
- (A) Holoenzyme
 - (B) Isoenzyme
 - (C) Prosthetic groups
 - (D) Apoenzymes.
33. Spherical subunits of eukaryotic chromatin composed of a core particle consisting of an octamer of histones and 146 nucleotide pairs are called
- (A) Polysomes
 - (B) Centrosomes
 - (C) Lysosomes
 - (D) Nucleosomes.
34. The suppression of action of a gene by another non-alleomorphic gene is called
- (A) Epistasis
 - (B) Hyperstasis
 - (C) Pseudo-dominance
 - (D) Hypostasis.
35. Which one of the following proteins is a major component of Cytoskeleton ?
- (A) Tubulin
 - (B) Fibrin
 - (C) Osmotin
 - (D) Porin.

36. Which of the following pairs of antibodies can activate the complement ?
- (A) IgA and IgD
 - (B) IgE and IgD
 - (C) IgG and IgE
 - (D) IgG and IgM.
37. Which is the *naturally* occurring auxin transport inhibitor ?
- (A) 1-N-naphthylphthalamic acid (NPA)
 - (B) Quercetin (flavonol)
 - (C) 2, 3, 5-Triiodobenzoic acid (TIBA)
 - (D) 1-Naphthoxyacetic acid (1 NOA).
38. Which cells of the gastric gland secrete intrinsic factor ?
- (A) Parietal cells
 - (B) Peptic cells
 - (C) Neck mucous cells
 - (D) Argentaffine cells.
39. The disease commonly called 'LOCK JAW' is caused by
- (A) *Bacillus pertusis*
 - (B) *Mycobacterium*
 - (C) *Clostridium tetani*
 - (D) *Treponema pallidum*.
40. In congenital nephrotic syndrome, which one of the following proteins shows structural abnormality due to mutation ?
- (A) Nephtrin
 - (B) Collagen-IV
 - (C) Fibronectin
 - (D) Fodrin.

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41. One of the conditions for biological magnification to occur in the food chain is that
- (A) the pollutant in the environment is both persistent and lipophilic
 - (B) the pollutant is very high and degradable
 - (C) the level of phosphorous is reduced
 - (D) the level of chemical oxygen demand of water is reduced.
42. Which one of the following characterizes REM sleep ?
- (A) desynchronized EEG and high amplitude EMG
 - (B) synchronized EEG and low amplitude EMG
 - (C) desynchronized EEG and low amplitude EMG
 - (D) synchronized EEG and high amplitude EMG.
43. The two strands in DNA helix are held together by
- (A) Sulphide bonds
 - (B) Phosphate bonds
 - (C) Hydrogen bonds
 - (D) Van der Waal forces.
44. In human Myoclonic Epilepsy and Ragged-Red Fibre disease syndrome (MERRF) is caused by
- (A) a mutation in X chromosome gene
 - (B) a mutation in a mitochondrial DNA gene
 - (C) trisomy 13
 - (D) trisomy 18.
45. Lesions in anterior hypothalamus cause
- (A) Hypothermia
 - (B) Hyperthermia
 - (C) Homeothermia
 - (D) Horripilation.

46. Which one is correct for blood volume per kg of the body wt. in normal adult human ?
- (A) 55 — 65 ml/kg body wt.
 - (B) 75 — 85 ml/kg body wt.
 - (C) 105 — 115 ml/kg body wt.
 - (D) 125 — 135 ml/kg body wt.
47. The lakes which are deep, generally clear but deficient in nutrients and without much biological activity are called
- (A) Eutrophic lakes
 - (B) Oligotrophic lakes
 - (C) Dystrophic lakes
 - (D) Hypertrophic lakes.
48. This year (2010) is being observed as
- (A) International year of Conservation of water
 - (B) International year of war against AIDS
 - (C) International year of Biodiversity
 - (D) International year of war against Global warming.
49. Under which phase of bacterial growth, bacteria increase in size but do not divide ?
- (A) Log phase
 - (B) Lag phase
 - (C) Stationary phase
 - (D) Death phase.
50. Recently semisynthetic re-creation of life was achieved using the organism
- (A) *Physarum polycephalum*
 - (B) *Mycoplasma mycoides*
 - (C) *Agrobacterium tumefaciens*
 - (D) *Hemophilus influenza.*