

1. BIODIVERSITY

1. The theme of the world summit on environment held in Johannesburg in 2002 was
 - a) only one earth
 - b) our common future
 - c) sustainable earth
 - d) energy crisis
2. The introduction of phylogeny in taxonomy was made by
 - a) Cuvier
 - b) Lamarck
 - c) Charles Darwin
 - d) Linnaeus
3. The Concept of Numerical Taxonomy was developed by.
 - (a) Cuvier
 - (b) Michael Adamson
 - (c) Lamarck
 - (d) Charles Darwin
4. If two or more workers describe the same organism using different names it results in
 - a) homonyms
 - b) synonyms
 - c) a valid name
 - d) nomenclature
- 5) The class Rhizopoda includes
 - (a) Protozoans with pseudopodia
 - (b) Animals with jointed legs
 - (c) Animals with setae
 - (d) Animals with fore limbs.
6. Which among the following is a pseudocoelomate ?
 - a) Platyhelminthes
 - b) Annelids
 - c) Mollusca
 - d) Nematoda
7. Five Kingdom concept does not include
 - a) fungi
 - b) viruses
 - c) flowering plants
 - d) bacteria
8. Excretion in Platyhelminthes is effected by
 - (A) flame cells
 - (B) nephridia
 - (C) kidneys
 - (D) gills
9. Which among the following is considered 'a blood fluke'?
 - a) Schistostoma
 - b) Taenia solium
 - c) Fasciola
 - d) Ascaris
10. The head formation or cephalization happened for the first time in Phylum
 - a) Arthropoda
 - b) Annelida
 - c) Mollusca
 - d) Echinodermata
11. Metameric Segmentation is seen in
 - (a) Protozoans
 - (b) Arthropods
 - (c) Annelids
 - (d) Mollusca
12. Which among the following is considered as a connecting link between Annelida and Arthropoda
 - a) Centipede
 - b) Cockroach
 - c) Peripatus
 - d) Spiders
13. The characteristic feature of echinoderms is the possession of
 - a) compound eye
 - b) absence of coelom
 - c) diploblastic condition
 - d) water vascular system
14. The water vascular system is seen in
 - (a) Echinodermata
 - (b) Annelida
 - (c) Mollusca
 - (d) Nematoda
15. Acrania refers to
 - a) fishes
 - b) birds
 - c) chordates
 - d) prochordates
16. Kidney in amniotes is
 - (a) Metanephric
 - (b) Mesonephric
 - (c) Anephric
 - (d) Pronephric
17. Viviparous animals are
 - (a) Fishes
 - (b) Mammals
 - (c) Aves
 - (d) Reptiles
18. The segmented body muscles in fishes are called as
 - a) myotomes
 - b) smooth muscles
 - c) skeletal muscles
 - d) visceral muscles
19. Which among the following is considered as a defeated group
 - a) amphibians
 - b) reptiles
 - c) mammals
 - d) fishes
20. The amniotes are characterised by the presence of
 - a) four legs
 - b) amphibious life
 - c) egg membranes
 - d) metamorphosis
21. Which among the following is not a character of mammals
 - a) diaphragm
 - b) right aortic arch
 - c) mammary glands
 - d) corpus collosum
22. The infective stage of plasmodium is
 - a) cryptozoite
 - b) amoebula
 - c) sporozoite
 - d) merozoite
23. In earthworm the clitellum is present in segments
 - a) 5 to 10
 - b) 14 to 17
 - c) 13 to 18
 - d) 20 to 25
24. The muscle fold found in the dorsal wall in the intestine of the earthworm is
 - a) diaphragm
 - b) Typhlosole
 - c) myotome
 - d) ommatidium
25. The chlorogogen cells on the wall of the intestine in earthworm is meant for
 - a) digestion
 - b) circulation
 - c) excretion
 - d) reproduction
26. Amphioxus has a

- a) long notochord b) short notochord c) tubular notochord d) all the above
27. Amphioxus is usually found
a) floating in water b) buried in sand c) in shallow pits d) in deep water
28. In Amphioxus the metapleural folds are continuous anteriorly with the
a) Velum b) Oral hood c) Vestibule d) Oral cirri
29. In Amphioxus the velum is fringed with
a) 8 velar tentacles b) 12 velar tentacles c) 20 velar tentacles d) 10 velar tentacles
30. The roof of the oral hood in Amphioxus has a ciliated pit called
a) gastric pit b) intestinal pit c) Hatschek's pit d) pancreatic pit
31. The number of myotomes in amphioxus may vary from
a) 80 or more b) 60 or more c) 100 or more d) 50 or more
32. In Amphioxus the skeleton consists of a peculiar tissue called
a) skeletal tissue b) nervous tissue c) notochordal tissue d) perivisceral tissue
33. In Amphioxus the wall of the pharynx is perforated by
a) 180 or more gill slits b) 150 or more gill slits c) 200 or more gill slits d) 80 or more gill slits
34. The ventral side of the intestine in Amphioxus has
a) intestinal diverticulum b) caecal diverticulum c) liver diverticulum d) all the above
35. In Amphioxus the mucous glands secrete a sticky mucous for
a) entangling the food materials b) capturing the food materials
c) digesting the food materials d) engulfing the food materials
36. In Amphioxus the inner wall of the pharynx is lined with
a) cilia b) tentacles c) cartilage d) cirri
37. The blood in amphioxus is
a) coloured b) watery c) colourless d) all the above
38. The excretory organs in amphioxus are
a) kidneys b) flame cells c) nephridia d) green glands
39. The nephridium of amphioxus bears about
a) 500 solenocytes b) 200 solenocytes c) 600 solenocytes d) 800 solenocytes
40. In Amphioxus there are about
a) 24 pairs of gonads b) 26 pairs of gonads c) 10 pairs of gonads d) 30 pairs of gonads
41. The uropygeal gland of pigeon are found
a) above the tail b) in the alimentary canal c) in the brain d) in the reproductive system
42. The hollow bones of birds are called as
a) pneumatic bones b) fused bones c) skull bones d) limb bones
43. Limbless amphibians are
(a) Frogs (b) Toads (c) Salamanders (d) Caecilians

2. CELL BIOLOGY

1. Living cells which are wet cannot be viewed in a / an
a) Compound microscope b) Phase - contrast microscope
c) Electron microscope d) Dark - field microscope.
2. Congo Red dye can be used to stain
a) Plant cell b) Nerve cell c) Gland cell d) Yeast cell
3. The cell theory was forwarded by
(a) Embden and Meyer Hoff (b) Schleiden and Schwann (c) T.H. Morgan (d) Singer and Nicholson
4. The increase in size of optical image over the size of the object is known as
(a) limit of resolution (b) transmission (c) power of magnification (d) conductance
5. The name 'cell' was coined by
(a) Leeuwenhoeck (b) Robert Brown (c) Robert Hook (d) Galileo
6. In a microscope the light is focussed on the object through
(a) condenser lens (b) objective lens (c) ocular lens (d) oil immersion lens
7. A three dimensional image of the object can be produced using
(a) compound microscope (b) dark-field microscope

- (c) transmission electron microscope d) scanning electron microscope
8. In microscopy a nucleus is normally stained using
 (a) Neutral red (b) Janus green B (c) Eosin (d) Hematoxylin
9. In cytological technique Bouin's solution is used for
 (a) fixation (b) dehydration (c) cleaning (d) embedding
10. The lipids of plasma membrane are mainly
 a) Glucose molecules b) Phospholipid molecules c) Protein molecules d) All the above
11. A unit membrane hypothesis for plasma membrane structure was provided by
 (a) Overton (b) Daveson (c) Robertson (d) Nicholson
12. In the plasma membrane the lipid bilayer is covered by
 (a) proteins (b) carbohydrates (c) water molecules (d) nucleic acid
13. The power houses of the cell are
 a) Lysosomes b) Ribosomes c) Mitochondria d) Centrosomes
14. Animal cells usually have
 a) single golgi apparatus b) double golgi apparatus c) Poly golgi apparatus d) dictyosome
15. The role of mitochondria in oxidative phosphorylation was explained by
 (a) Leninger (b) Embden (c) Krebs (d) Meyer hoff
16. Which of the following is called as the cell respiratory organelle
 (a) ribosomes (b) lysosomes (c) golgi bodies (d) mitochondria
17. The ribosomes are meant for
 (a) phosphorylation (b) respiration (c) protein synthesis (d) oxidation
18. Lung cancer may be caused by
 a) cigarette smoking b) shale oil c) radio active ores d) beta-naphthylamine
19. Which of the following organelle forms the intra cellular transporting system
 (a) mitochondria (b) lysosomes (c) Endoplasmic reticulum (d) ribosomes
20. Which of the following cell may not contain golgi apparatus
 (a) epithelial cells (b) glandular cells (c) RBC (d) secretory cells
21. The lysosome originates from
 (a) mitochondria (b) ribosomes (c) nucleus (d) golgi apparatus
22. Lysosomes are involved in :-
 a) intracellular digestion b) extracellular digestion c) Phagocytosis d) pinocytosis
23. Peroxisomes are found in the cells of
 a) Protozoa b) Porifera c) Coelenterata d) Platyhelminthes
24. The movement of the flagellum is regulated by
 (a) plasma membrane (b) nucleus (c) basal body (d) ribosomes
25. Each centriole and basal body is formed of Microtubules as
 a) seven triplets b) eight triplets c) ten triplets d) nine triplets
26. The nucleus is found in all the
 a) Bacteriae b) Viruses c) Eukaryotic cells d) All the above
27. The number of nucleus (nucleii) in matured mammalian erythrocytes is
 (a) one (b) many (c) two (d) nil

3. HUMAN ANATOMY

1. The cornified region of the skin is formed of
 a) stratum lucidum b) stratum basale c) stratum spinosum d) stratum corneum
2. The goose flesh is formed due to the contraction of
 a) diaphragm b) errector pili c) trapezius muscle d) gluteus maximus
3. The skin colour is due to the pigment.
 a) melanin b)haemoglobin c) neutral red d) Janus green
4. The number of facial bones are
 a) 26 b) 25 c) 14 d) 22
5. The cervical vertebra supporting the head is

- a) axis b) atlas c) sacral d) lumbar
6. Choose the flat bone in our body.
a) skull bone b) ribs c) sternum d) all the above
7. The number of thoracic bones are
a) 5 b) 12 c) 7 d) 1
8. The bone that holds the upper limb away from the body is
a) scapula b) pelvic bone c) clavicle d) femur 173
9. The broadest muscles are named as
a) deltoid b) gracilis c) longus d) lattismus
10. In shape the deltoid muscle is a
a) square b) slender c) circular d) triangular
11. The major breathing movement is due to
a) scalene b) thoracic c) diaphragm d) intercostals
12. The largest salivary glands are
a) parotid b) submandibular glands c) sublingual glands d) labial glands
13. The human dentition is
a) heterodont b) thecodont c) diphyodont d) all the above
14. The length of the duodenum in human alimentary canal is
a) 8 cm b) 1.8 m c) 9 cm d) 25 cm
15. The lung is surrounded by
a) duramater b) pericardial membrane c) pleura d) meninges
16. Breathing process can be interfered with due to
a) closure of the ileo-colic valve b) enlargement of the tonsil
c) closure of pyloric sphinctes d) vibration of the vocal cord
17. The reduction in blood pressure may be caused due to
a) distributing vessels b) resistance vessel c) exchange vessels d) reservoir vessels
18. Vaso-dilation and vaso-constriction are caused by
a) tunica intima b) exchange vessels c) tunica media d) tunica adventitia
19. The wall of the blood vessels are supplied with blood by
a) vasa nervosum b) exchange vessels c) vasa vasorum d) capacitance vessels
20. The exchange vessels are
a) arteries b) arterioles c) Venules d) Capillaries
21. Spleen is located on the left side of
a) the abdominal cavity b) the thoracic cavity c) the lung d) the kidney
22. The synapses are formed between
a) nerves and muscles b) nerve tissues c) capillaries d) organs
23. The cerebral hemispheres are connected by a sheet of nerve fibres called
a) corpora quadrigemina b) choroid plexus c) corpus callosum d) cauda equina
24. The number of human cranial nerves is
a) 12 pairs b) 31 pairs c) 10 pairs d) 11 pairs
25. The Sebaceous glands produce
a) sebum b) tear c) wax d) oil
26. The intraocular pressure is maintained by
a) aqueous humor b) vitreous humor c) cerebro spinal fluid d) lymph fluid
27. The hypophysis is connected with the brain through
a) pars tuberalis b) adeno hypophysis c) hypothalamus d) pars distalis
28. The average weight of human thyroid gland is
a) 10 gms b) 20 gms c) 500 gms d) 20 kg
29. The average weight of kidney in adult female is
a) 150 g b) 135 g c) 75 g d) 250 g
30. The bunch of capillaries in the Bowman's capsule forms the
a) medullary rays b) calyces c) glomerulus d) capillary endothelium
31. The interstitial cells are otherwise called

32. The ovary of the foetus at 5 months gestation has
 a) Leydig cells b) Sperm cells c) Glandular cells d) Secretory cells
 a) 40,000 Oocytes b) 7 million Oocytes c) 400 Oocytes d) No Oocytes
33. The inner layer of membrane lining the uterus is
 a) perimetrium b) myometrium c) endometrium d) serous layer
34. The uterine tubes are otherwise called as
 a) ureters b) spermiducts c) fallopian tubes d) birth canal

4. GENETICS

1. The skin colour agouti in rabbits has the genotype
 (a) CC (b) Cc_a (c) Cc_h (d) all the above.
2. The alternative forms of a gene are
 (a) allelomorphs (b) multiple alleles (c) heterozygous (d) homozygous.
3. The universal recipient is
 (a) 'O' Group (b) 'AB' Group (c) 'A' Group (d) 'B' Group.
4. ABO blood group in man is an example for
 a) Pleiotropism b) multiple allelism c) x - linked inheritance d) y - linked inheritance
5. The inheritance of skin colour was worked out by.
 (a) Yule (b) Mendel (c) Galton (d) C.B.Davenport.
6. Rh. factor in blood was discovered by
 a) Galton b) Davenport c) Landsteiner and Wiener d) Clarence McClung 198
7. The type of sex determination in moths and butterflies is
 a) xx - xo type b) xx - xy type c) zo - zz type d) zw - zz type
8. The Y chromosome in Drosophila is
 (a) longer (b) straight (c) curved (d) rod like
9. The poly 'X' females are
 (a) super females (b) hermaphrodites (c) bisexuals (d) intersex
10. An example for ZW - females is
 (a) Gypsomoth (b) Man (c) Honeybee (d) Drosophila
11. Most of the sex linked characters in humans are
 (a) Y-linked (b) XY linked (c) X linked (d) all the above.
12. X/A ratio in super females is
 a) 1.5 b) 1.0 c) 0.6 d) 0.5
13. Holandric genes occur exclusively on
 a) x - chromosomes b) y - chromosomes c) autosomes d) both x and y chromosomes
14. The genotypes better adapted for malaria is
 (a) Hb_A Hb_A (b) Hb_A Hb_s (c) Hb_s Hb_s (d) all the above
15. A_y allele in mice is
 (a) pleiotropic (b) co-dominant (c) lethal (d) yellow colour

5. DEVELOPMENTAL BIOLOGY

1. The founder of the science of embryology was
 (a) Aristotle (b) E.Haeckel (c) O.Hertwig (d) E.B.Wilson
2. The process of spermiogenesis involves
 a) production of sperms b) differentiation of spermatids into spermatozoa
 c) formation of testis d) differentiation of nucleus
3. Centrolecithal eggs are produced by
 a) frog b) human beings c) reptiles d) insects
4. In amphibian eggs yolk occurs in the form of
 (a) yolk platelets (b) blood platelets (c) phosphovitin (d) lipovitelline
5. Macrolecithal eggs are found in

- (a) amphibians (b) birds (c) fishes (d) echinoderms
6. Superficial cleavage is seen in
(a) amphibians (b) insects (c) reptiles (d) birds
7. Discoidal cleavage is seen in the eggs of
a) birds b) amphibians c) insects d) amphioxus
8. Sach's law is related to
a) gametogenesis b) cleavage c) gastrulation d) organogenesis
9. The cavity formed in a gastrula is called as
a) gastrocoel b) blastocoels c) blastopore d) cavity
10. The embryo having a fluid -filled cavity and a layer of cell is called
(a) blastocoels (b) blastula (c) morula (d) blastoderm
11. The gastrorcoel later becomes
(a) archenteron (b) blastula (c) blastocoel (d) ectoderm
12. The heart is derived from
(a) ectoderm (b) mesoderm (c) endoderm (d) all the above
13. The cavity of the optic vesicle is
a) optic cup b) optocoel c) optic stalk d) optic cavity
14. The valves of the heart arise as folds of
a) myocardium b) epicardium c) endocardium d) pericardium

6. ECONOMIC ZOOLOGY

1. Reef forming corals normally grow in
(a) cold waters (b) deep seas (c) shallow, tropical seas (d) polluted and muddy waters
2. The Great Barrier reef occurs in
(a) Gulf of kutch (b) Carribean islands (c) Andaman islands (d) the coast of Australia
3. The larva of corals is a
(a) trochophore (b) planula (c) medusa (d) polyp
4. A ring shaped reef with a lagoon connected to the sea is a / an
(a) atoll (b) barrier (c) fringing (d) gulf
5. The coral used in jewellery making is
(a) Corallium nobile (b) Tubipora (c) Organ pipe (d) Guano
6. The earthworm commonly employed in Indian vermiculture is
(a) *Lampito mauritii* (b) *Apis indica* (c) *Penaeus indicus* (d) *Pinctada fucata*
7. The degrades of organic matter by worm activity is
(a) lac (b) isinglass (c) vermicompost (d) guano
8. The number of offspring, a single earthworm could produce a year
(a) 1000 to 1500 (b) 10,000 to 20, 000 (c) 5000 to 10,000 (d) 80 to 100
9. The honey bee used commonly in bee-keeping industry is
(a) *Apis dorsata* (b) *Apis floralae* (c) *Apis indica* (d) all the above
10. The scientific management and production of silk is
(a) Sericulture (b) horticulture (c) Apiculture (d) aquaculture
11. The secretion from the abdominal glands of the worker bee is
(a) honey (b) nectar (c) beeswax (d) all the above
12. The silk produced by *Bombyx mori* is
(a) tasar silk (b) muga silk (c) arandi silk (d) mulberry silk
13. Assam is famous for
(a) Muga silk (b) Eri silk (c) Tasar silk (d) Mulberry silk
14. Lac insects are cultred in
(a) Kusum (b) Ber (c) Babul (d) All the above
15. The predatory insects are said to be
(a) entomophagous (b) larvivorous (c) parasitic (d) pests
16. An example for insect predator is

- (a) Eudrillus (b) Laccifer (c) Lady bird beetle (d) Tachynid fly
17. The organization involved in pearl oyster culture is
(a) CIBA (b) CMFRI (c) NIO (d) MPEDA
18. The most common freshwater prawn used in aquaculture is
(a) *Macrobrachium* sp (b) *Metapenaeus* sp (c) *Penaeus* sp (d) *Panulirus* sp
19. The name Kal Eral in Tamil refers to
(a) Prawns (b) crabs (c) a fish (d) lobsters
20. The common Indian Lobster is
(a) spiny Lobster (b) coral Lobster (c) slipper Lobster (d) sand Lobster
21. Fish meal is used as in
(a) animal feed (b) manufacture lubricants (c) preparation of cakes (d) all the above
22. The fish *Stromateus argenteus* is popularly called as
(a) guppy (b) pomfret (c) gold fish (d) angel fish
23. Gold fishes are the varieties of the genus
(a) Xiphophorus (b) Betta (c) Carassius (d) Lebistes
24. Which part of the body in fish provides isinglass
(a) skin (b) liver (c) air bladder (d) bone
25. Which country was economically benefitted by marketing bird excreta
(a) USA (b) Peru (c) Australia (d) West Indies
26. Guano are important in the usage as
(a) fish meal (b) fertilizers (c) adhesives (d) lubricants
27. The idea of aquarium maintenance was first conceived by
(a) Chinese (b) Japanese (c) Red Indians (d) Africans
28. Washing the aquarium tanks with 1% potassium permanganate solution is necessary for
(a) raising the nutritive value (b) avoiding small (c) making the glass clear (d) disinfecting
29. Nandankanan Biological park is situated in
(a) Delhi (b) Orissa (c) Bihar (d) Assam
30. Example (s) for mechanical vectors
(a) sand fly (b) rat – flea (c) house fly (d) all the above
31. The filarial worms attain sexual maturity in the
(a) human blood vessels (b) human lymphatic vessels (c) culex mosquito (d) all the above
32. The pneumonic plague affects
(a) liver (b) brain (c) lymph glands (d) lungs
33. Which is the best time to have blood test for filariasis
(a) morning (b) evening (c) noon (d) mid-night
34. The defensive structure found in physalia is
(a) neurotoxins (b) fangs (c) stinging cells (d) poison glands with claws
35. The intestine and kidneys of the puffer fish has a deadly poison called
(a) tetraoxin (b) cyanide (c) haemotoxin (d) cystamine
36. The characteristic feature of tail in sea snake is
(a) round (b) pointed (c) compressed (d) cylindrical
37. *Ophiophagus hannah* refers to
(a) Indian cobra (b) King cobra (c) Russell's viper (d) Sea snake
38. Oysters, tunicates, Lepas and cardium are
(a) Entamophags (b) foulers (c) parasites (d) vectors
39. The caterpillar of the butterfly causes
(a) cabbage fertilization (b) cross pollination (c) damage to leaves (d) damages to roots
40. Fumigation is a method of
(a) disinfection (b) harvesting (c) food processing (d) watering
41. The silver fishes commonly live among
(a) rocks (b) algae (c) other fishes (d) old books

7. ORIGIN OF LIFE

- Oparin's theory is called as
(a) the Biogenesis theory (b) the Primary abiogenesis (c) Cosmozoic theory (d) Special creation theory
- The resistant spores that led to origin of life on earth are named as
a) protozoans b) cosmozoa c) viruses d) bacteria
- The proposal that living forms are animated forms of non-living matter was provided by
a) Empedocles b) Thales c) Lamarck d) Aristotle
- The protocell model was formed of
a) coacervates b) proteins c) ozone d) methane
- Mesozoic era is commonly referred to as
a) age of mammals b) age of fishes c) golden age of reptiles d) cradle of ancient life
- Cenozoic era is called as
(a) Cradle of ancient life (b) Age of mammals (c) golden age of fishes (d) All the above.
- The first vertebrates were included in the group
a) Amphibia b) Agnatha c) Carinata d) Aves
- An earliest Jawless fish was
(a) Sword fish (b) Cat fish (c) Mullet (d) Jamoytius
- The duration of cenozoic era was
a) 210 to 65m years ago b) 65m year ago to till date
c) 600 to 440 m years ago d) 210m year ago to till date
- The coal and petroleum are obtained from the forests of
a) Devonian period b) Mesozoic era c) Cretaceous d) Tertiary period
- The earliest ancestor of horses were
a) Eohippus b) Equus c) Seymouria d) Dinosaurs
- Archaeopteryx was a connecting link in between
(a) Amphibians and reptiles (b) Fishes and amphibians
(c) Birds and reptiles (d) Birds and mammals
- Fossils of woolly mammoths were obtained from
a) Siberia b) Sahara c) Europe d) Bavaria
- Identify the early ancestor of horses
a) Dinosaurs b) Seymouria c) Archaeopteryx d) Hyracotherium
- Fossilized moulds are found
(a) in rocks (b) in volcanic ashes (c) in sand (d) all the above