CONTROL & COORDINATION

1. The two systems that regulate the activities of other systems of an animal are:-
   (A) nervous system and muscular system (B) endocrine system and respiratory system
   (C) nervous system and endocrine system (D) muscular system and sense organs
2. In which direction does the nerve impulse travel once it is received by the receptor ?
   (A) Terminal branches, axon, cell body and dendrite (B) Dendrite, axon, cell body and terminal branches
   (C) Axon, dendrite, cell body and terminal branches (D) Cell body, axon, dendrite and terminal branches
3. The effect of myelin sheath on an impulse is :-
   (A) to affect the speed of the incoming impulse
   (B) to moderate the speed of the incoming impulse
   (C) to increase the speed of conduction of the impulse
   (D) It is insulating material and has nothing to do with the speed of the impulse
4. At most of the synapses :-
   (A) an electric current jumps a gap (B) there is contact between two neurons
   (C) heat is produced (D) neurohumors or neurohormones are released
5. Insulin and glucagon are produced in the :-
   (A) liver (B) thyroid
   (C) Islets of Langerhans present in the pancreas (D) spleen
6. Insulin is :-
   (A) an enzyme which digests protein (B) a hormone which helps metabolism of sugar
   (C) a hormone which promotes growth (D) an enzyme which converts invertase into glucose
7. Injecting a tadpole with thyroxine would lead to :-
   (A) giant but normal tadpoles (B) precocious metamorphosis
   (C) stoppage of metamorphosis (D) atrophy of gonads
8. A very high level of calcium in the blood suggests malfunction of the :-
   (A) parathyroid (B) thyroid (C) thymus (D) adrenal gland
9. Cortisone is used for the treatment of inflammation, allergy and arthritis. Which of the following endocrine glands produces cortisone :-
   (A) Thyroid (B) Pancreas (C) Adrenal (D) Gonads
10. Proprioceptors are :-
   (A) meant for detecting pressure in the skin
   (B) for magnifying sound in the internal ear
   (C) internal sense organs which occur most frequently in muscles
   (D) for the detection of direction of waves in fishes
11. Production of ADH, monitor of temperature and blood pressure, is mainly controlled by :-
   (A) cerebellum (B) cerebrum (C) hypothalamus (D) medulla
12. Learning, abstract thinking, memory and behaviour of a person are governed by :-
   (A) cerebellum (B) cerebrum (C) thalamus (D) medulla
13. The cerebellum is concerned with :-
   (A) coordination of muscular movements (B) memorization of facts
   (C) perception (D) regulation of the working of the heart and lungs
14. Reflex action in a body is not :-
   (A) inborn (B) automatic and quick (C) protective in nature (D) volunatary

15. The number of cranial nerves is :-
(A) ten pairs in man and ten pairs in a toad
(B) thirteen pairs in man and ten pairs in a toad
(C) twelve pairs in man and ten pairs in a toad
(D) twelve pairs in man and twelve pairs in a toad

16. The following are not the functions of medulla of the brain :-
(A) control of voluntary actions, memory and judgement
(B) respiration and coughing
(C) circulation and heart beat
(D) swallowing and vomiting

17. The amount of glucose in the blood is controlled by :-
(A) water
(B) combined action of insulin and adrenaline
(C) adrenaline alone
(D) insulin alone

18. Islets of Langerhans produce :-
(A) insulin and secretin
(B) glucagon and adrenaline
(C) insulin and glucagon
(D) ACTH and noradrenaline

19. The type of behaviour in which a substitute stimulus evokes the same response as the original stimulus is called:-
(A) reflex action
(B) conditioned reflex action
(C) operon
(D) habit

20. Neurohumors released by the terminal branches of neurons are :-
(A) acetylcholine and noradrenaline
(B) sympathin adn thyroxine
(C) acetylcholine and cholinesterase
(D) cholinesterse and noradrenaline

21. Maximum developed cerebrum is found in :-
(A) sharks (B) rabbit (C) man (D) whale

22. Dorsal nerve cord is characteristic of :-
(A) earthworm (B) hydra (C) amoeba (D) primates

23. The conditioned reflex was discovered by :-
(A) Watson and Crick (B) Pavlov (C) Morgan (D) Mendel

24. The main portion(s) of a neuron is/are :-
(A) cyton wtih dendrites
(B) axon with or without sheath
(C) terminal branch
(D) All of the above

25. Grey matter of the brain contains :-
(A) cell bodies
(B) cell bodies with processes
(C) cell bodies with processes and a large number of synapses
(D) sensory and motor nerve cells

26. Hypothalamus controls the following function of the body, excluding :-
(A) sleep
(B) body temperature
(C) osmoregulation
(D) analysis of stimuli received through sense organs

27. The gland whose hormone affects the functions of many other endocrine glands is :-
(A) thyroid gland (B) pituitary gland (C) pancreas (D) parathyroid

28. The longest cell in the body of an animal is :-
(A) osteocytes (B) neuron (C) chromatophores (D) lymph corpuscles

29. Which cell stops dividing after birth ?
(A) Glial cells (B) Epithelium (C) Liver (D) Neuron

30. The largest number of cell bodies of neurons in our body is found in :-
(A) brain (B) spinal cord (C) tongue (D) retina

31. Which of the following is NOT a function of neuron ?
(A) Receive information (B) Conduct a signal
(C) Form the myelin sheath (D) Co-ordinate metabolic activities

32. Hearing is controlled by :-
(A) temporal lobes (B) cerebrum (C) hypothalamus (D) parietal lobe

33. Thermostat is an instrument by which one can regulate the temperature of an oven, a heater or a refrigerator. Functionally a similar mechanism is located in the mammalian brain in the region of the :-
(A) cerebrum (B) hypothalamus (C) cerebellum (D) medulla oblongata

34. Spinal cord passes through :-
(A) obturator foramen (B) condylar canal (C) sphenopalatine foramen (D) foramen magnum

35. A man suddenly sees a tiger. His heartbeat goes up, blood pressure increases, etc. Which hormone is released at this time in his body :-
(A) Parathormone (B) Adrenaline (C) Corticoid (D) Thyroxine

36. Receptors of pressure present in deep layers of skin are :-
(A) Krause's end bulb (B) Meissner's corpuscles (C) Corpuscles of Ruffini (D) Pacinian corpuscles

37. The speed at which impulses are conducted increase with :-
(A) increasing diameter of the soma (B) increasing diameter of the axon
(C) increasing number of dendrites (D) increasing branching of the dendrites

38. Reflex arc is formed by :-
(A) receptor - brain - muscles (B) muscles - spinal cord - receptor
(C) receptor - spinal cord - muscles (D) muscle - brain - receptor

39. In mammals, the autonomic system is composed of :-
(A) sympathetic and parasympathetic nerves (B) cranial and spinal nerves
(C) brain and spinal cord (D) medullated and nonmedullated nerves

40. Which part of the donor's eye is used for grafting in order to cure certain cases of blindness ?
(A) Retina (B) Lens (C) Cornea (D) Iris

41. A person going up to 10,000 feet high in a hot balloon may develop severe pain in the ear due to :-
(A) blocked eustachian tube (B) rupture of fenestra
(C) endolymph getting into semicircular canals (D) fear of great height

42. In mammals, the middle ear ossicles from inside to outside are in the sequence of :-
(A) stapes, incus, malleus (B) stapes, malleus, stapes (C) incus, malleus, stapes (D) malleus, incus, stapes

43. You are riding a bicycle and take a sudden turn around a sharp corner. The organs involved in the mainteanance of balance is :-
(A) medulla oblongata (B) semicircular canals (C) cerebrum (D) optic chiasma

44. When a person rotates rapidly for a sustained period of time it results in the sensation of dizziness and impairad ability to walk steadily. This is because :-
(A) the hair cells of ampull are damaged (B) endolymph comes in contact with tectorial membrane
(C) the horizontal and vertical canals are stimulated (D) the vestibular branch of the auditory nerve is pressed

45. Endocrine glands put their secretions directly into :-
(A) ducts (B) blood (C) both (D) none of these

46. The first hormone to be isolated was :-
(A) thyroxine (B) testosterone (C) epinephrine (D) secretin

47. According to the accepted concept of hormone action, if receptor molecules are removed from target organs :-
(A) the target organ will continue to respond to the hormone without any difference
(B) the target organ will continue to respond to the hormone but will require higher concentration
(C) the target organ will not respond to the hormone
(D) the target organ will continue to respond to the hormone but in the opposite way

48. In an accident the anterior pituitary of a four year old boy was severely damaged but the boy survived. What is likely to happen :-
(A) High levels of thyroxine will be released (B) Spermatogenesis will be released
(C) The boy will not grow much in height (D) The growth of mammary glands will be stimulated

49. A gorilla like man with huge hand and legs. This is due to the abnormal secretion of :-
(A) pituitary FSH (B) pituitary LH (C) pituitary GH (D) thyroid

50. LH and FSH are called :-
(A) antistress hormones (B) gonadotropic hormones
(C) emergency hormone (D) neurohormones

51. FSH is to estrogen as LH is to :-
(A) vasopressin (B) testosterone (C) progesterone (D) LTH

52. In a pregnant woman having prolonged labour pains, its childbirth has to be hastened. It is advisable to administer a hormone that can :-
(A) activate the smooth muscles (B) increase the metabolic rate
(C) release glucose into the blood (D) stimulate the ovary

53. Diabetes insipidus is the syndrome which results due to the :-
(A) failure of neurohypophysial system to inhibit the excess release of ADH
(B) failure of neurohypophysial system to produce or release ADH
(C) inability of pituitary to produce oxytocin
(D) inability of pituitary to release ACTH

54. If a rat was given an injection of sodium iodide with radioactive iodine, then in which one of the following most of the iodine would be incorporated ?
(A) Cartilage (B) Thyroid (C) Lymph nodes (D) Parathyroid

55. Ca^{2+} level is controlled by :-
(A) thyroxine (B) FSH
(C) pancreas (D) thyroid and parathyroid

56. Cretinism in young children is due to lack of :-
(A) vitamin D (B) growth hormone (C) calcitonin (D) thyroxine

57. Exophthalmic goitre is caused due to :-
(A) hypersecretion of thyrocalcitonin (B) hyposecretion of thyrocalcitonin
(C) hypersecretion of thyroxine (D) hyposecretion of thyroxine

58. Failure of insulin production results in :-
(A) addison's disease (B) cushing's disease
(C) diabetes insipidus (D) diabetes mellitus

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	C	B	C	D	C	B	B	A	C	C	C	B	A	D	C
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	A	B	C	B	A	C	D	B	D	C	D	B	B	D	A
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	D	A	B	D	B	D	B	C	A	C	A	A	B	D	B
Que.	46	47	48	49	50	51	52	53	54	55	56	57	58		
Ans.	D	C	C	C	B	C	A	B	B	D	D	C	D		

REPRODUCTION IN PLANT

1. In which of the following plants vegetative reproduction takes place with the help of bulbils ?
(A) *Colocasia* (B) *Zingiber* (C) *Agave* (D) *Vallisneria*

2. Scion is a term in relation to :-
(A) layering (B) cutting (C) grafting (D) micropropagation

3. Which of the following is propagated by means of cuttings ?
(A) Sugarcane (B) Coffee (C) Citrus (D) All of these

4. Vegetative propagation takes place by the leaves of :-
(A) *Calanchoe* (B) *Bryophyllum* (C) Banana (D) Both (A) and (B)

5. A method in which roots are induced on the stem while it is still attached to the parent plant is called :-
(A) layering (B) cutting (C) grafting (D) vivipary

6. During grafting rootstock is generally derived from a plant :-
(A) efficient in water and mineral absorption (B) resistant to diseases
(C) that grows strong and healthy branches (D) all of the abvoe

7. What is parthenocarpy :-
(A) Development of fruit without hormones (B) Development of fruit without fertilisation
(C) Development of egg without fertilisation (D) Development of embryo without fertilisation

8. What is micropropagation ?
(A) Germination of seed with cotyledons above the soil
(B) A technique to obtain new plants by cultivating the cells or tissues in culture medium
(C) The mature stage of endosperm
(D) To manufacture hormones

9. Pollination is best defined as :-
(A) the transference of pollens from anthers to stigma
(B) the germination of pollen grains
(C) visiting of flowers by ants
(D) the growth of pollen tube in the ovule

10. Pollination is a characteristic of :-
(A) angiosperms (B) pteridophytes (C) bryophytes (D) all of the above

11. Self-pollination means :-
(A) germination of pollens within the anther
(B) transference of pollens from anthers to the stigma within the same flower
(C) transference of pollens from one flower to another on the different plant
(D) presence of male and female sex organs in the same flower

12. How is pollination brought about in maize ?
(A) By insects (B) By bats (C) By wind (D) By water

13. Pollination by bats is called :-

(A) cheiropterophily (B) ornithophily (C) malacophily (D) entomophily

14. Entomophily is pollination by :-

(A) water (B) animals (C) air (D) insects

15. What is emasculation ?

(A) Pollination between flowers of different plants

(B) Pollination between flowers of same plant

(C) Artificial pollination

(D) Removal of the stamens of a plant to prevent self pollination

16. In angiosperms meiosis occurs when :-

(A) flowers are formed (B) pollen grains are formed

(C) seeds are formed (D) seeds germinate

17. Fertilisation means :-

(A) transfer of male gamete to female gamete

(B) adhesion of male and female reproduction organs

(C) fusion of nuclei of male and female gametes

(D) the shedding of gametes from a reproductive organ

18. Double fertilisation is characteristic of :-

(A) angiosperms (B) algae (C) gymnosperms (D) bryophytes

19. Double fertilisation means :-

(A) fusion of eggs and pollen nucleus of two pollen nuclei

(B) fusion of one male gamete with the egg and other with the secondary nucleus

(C) fusion of two eggs

(D) fusion of one male gamete with the egg and other with synergids

20. Embryosac is a :-

(A) 7 celled and 7 nuclei structure

(B) 8 celled and 7 nuclei structure

(C) 7 celled and 8 nuclei structure

(D) None of these

Ques.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	C	C	D	D	A	D	B	B	A	A	B	C	A	D	D	B	C	A	B	C

REPRODUCTION IN ANIMALS

1. During mitosis which of the following is (are) equally distributed in the daughter cells ?
(A) Chloroplasts (B) Centrosome (C) Cytoplasm (D) Chromosomes

2. A contraceptive is :-
(A) Condom, cervical cap or diaphragm (B) Intrauterine device
(C) Pill (D) All the above

3. Reproduction by budding takes place in :-
(A) hydra and earthworm (B) hydra and yeast
(C) yeast and bacteria (D) bacteria and amoeba

4. The gametes are formed as a result of :-
(A) vegetative propagation (B) sexual reproduction
(C) meiosis (D) mitosis

5. The advantage of sexual reproduction over asexual reproduction is that :-
(A) hereditary variations in the offsprings take place (B) quick propagation of the progeny takes place
(C) male and female are able to meet (D) larger offsprings are produced

6. A contraceptive pill contains :-
(A) Progesterone and estrogen (B) Spermicidal salts
(C) Chemicals that cause automatic abortion (D) Chemicals that prevent fertilization of ovum

7. Eggs containing a larger amount of yolk are characteristic of :-
(A) external fertilisation and external development (B) external fertilisation and internal development
(C) internal fertilisation and external development (D) internal fertilisation and internal development

8. Which of the following is not characteristic of external fertilisation in vertebrates ?
(A) Eggs are laid in water (B) Streamlined body of the larva
(C) Presence of gills (D) Internal development

9. The structure which provides a place for attachment and exchange of materials between mother and the foetus in eutheria is called :-
(A) uterus (B) placenta (C) oviduct (D) cervix

10. In which of the development stages of a frog, does the blastopore start appearing ?
(A) 8-celled stage (B) Morula (C) Blastula (D) Gastrula

11. During the embryonic development of an organism in vertebrates, alimentary canal is developed from:-
(A) ectoderm (B) endoderm (C) mesoderm (D) epidermis

12. The importance of reproduction in organisms is because of :-
(A) formation of new individuals (B) production of individuals with same traits
(C) production of individuals with different traits so as to bring varieties and variations in a population
(D) All of the above

13. Puberty period in girls is between :-
(A) 12-18 years of age (B) 10-16 years of age (C) 14-20 years of age (D) 15-18 years of age

14. A human zygote has :-
(A) 46 chromosomes (B) 23 chromosomes (C) 47 chromosomes (D) 48 chromosomes

15. Regeneration is a process in which :-
(A) a new individual is produced (B) missing parts grow again
(C) old individuals are replaced by new ones (D) a tumour is produced

16. Primary sex organ is :-
(A) Ovary/testis (B) Uterus/Seminal Vesicle (C) Breast/Beard (D) spermatic cord

17. Secondary sex organ is :-
(A) Testis (B) Breast (C) Beard (D) Vas deferens

18. Temperature in scrotum necessary for sperm formation should be :-
(A) 2°C above body temperature (B) 2°C below body temperature
(C) 4°C above body temperature (D) 4°C below body temperature

19. Voice is high pitched in :-
(A) Aged persons (B) Adult males (C) Boys (D) Females

20. First menstrual cycle is :-
(A) Parturition (B) Menopause (C) Menarche (D) Implantation

21. Menopause occurs in females at the age of :-
(A) 55 - 60 years (B) 50 - 55 years (C) 45 - 50 years (D) 37 - 42 years

22. Nonprimate mammals have :-
(A) Menstrual cycle (B) Oestrous cycle (C) Breeding seasons (D) Non breeding seasons

23. MTP is :-
(A) Multitrade practices (B) Malthusian treatis on population
(C) Multiple temporary frequency (D) Medical termination of pregnancy

24. Glands of male reproductive system are:-
(A) Prostate and seminal vesicles (B) Prostate, Bertholin's and seminal vesicles
(C) Seminal vesicles and Bertholin's glands (D) Prostate, Cowpers and seminal vesicles

25. Number of sperms present in a single ejaculation of semen contains :-
(A) 10,000 (B) 100,000 – 1000,000 (C) 30–40 million (D) 300 – 400 million

26. Development of fertilized egg starts from :-
(A) Invagination (B) Regeneration (C) Cleavage (D) Fragmentation

27. Mesorchium is peritoneal covering of :-
(A) Ovary (B) Testis (C) Kidney (D) Liver

28. Mesovarium is peritoneal covering of :-
(A) Ovary (B) Testis (C) Kidney (D) Liver

29. Fertilization in humans occurs in :-
(A) Uterus (B) Vagina (C) Fallopian tubes (D) Urethra

30. The function of mitochondria in sperm is :-
(A) To control the movement of sperm (B) To provide energy for movement of sperm
(C) To provide energy to nucleus (D) None of the above

31. Primary oocyte is :-
(A) Haploid (B) Diploid (C) Polyploid (D) None of the above

32. Secondary oocyte is :-
(A) Haploid (B) Diploid (C) Polyploid (D) None of the above

33. Eggs from ovary are released in :-
(A) Oviduct (B) Kidney (C) Ureter (D) Coelom

34. The functional unit of testis of man is :-
(A) Uriniferous tubules (B) Malphigian tubules (C) Seminiferous tubules (D) Acini or lobules

35. Chorionic gonadotropin is secreted by :-
(A) Pituitary (B) Ovary (C) Placenta (D) Uterus

36. Testosterone is secreted by :-
(A) Leydig's cells (B) Testis of male (C) Vagina of female (D) None of the above

37. Meiosis occurs in :-
(A) Primary spermatocytes (B) Secondary spermatocytes
(C) Both A and B (D) Spermatogonia

38. Human females possess 44 + XX chromosomes. The secondary *oocyte* shall have :-
(A) 44 + XX (B) 22 + X (C) 22 (D) 44

39. Gestation period in humans is :-
(A) 7 months (B) 9 months (C) 25 months (D) 8 months

40. Foetus is nourished by :-
(A) Placenta (B) Yolk (C) Blood (D) Phagocytosis

41. Which is related to males ?
(A) Oral pill (B) Tubectomy (C) Vasectomy (D) None of the above

42. Nerves develop from :-
(A) Ectoderm (B) Mesoderm
(C) Endoderm (D) Both layers of mesoderm and endoderm

43. Fertilization was first discovered by :-
(A) Aristotle (B) Leeuwenhoek (C) Harvey (D) Pander

44. An IUCD is :-
(A) Copper - T (B) Condom (C) Vasectomy (D) Pill

45. A sterilisation technique is :-
(A) Loop (B) Diaphragm (C) Tubectomy (D) Cervical cap

Ques.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	D	D	B	C	A	A	C	D	B	D	B	D	B	A	B	A	D	D	D	C
Ques.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans.	B	B	C	D	D	C	B	A	C	B	B	A	A	C	C	A	C	B	B	A
Ques.	41	42	43	44	45															
Ans.	C	A	A	A	C															

HEREDITY AND EVOLUTION

1. Mendel conducted his hybridisation experiment with :-
(A) Chick pea (B) Pigeon pea (C) Garden pea (D) Wild pea

2. Mendel studied seven contrasting characters for his breeding experiment with *Pisum sativum*, which of the following character did he not use :-
(A) Pod colour (B) Pod shape (C) Leaf shape (D) Plant height

3. The main reason of Mendel's successs in discovering the principles of inheritance was :-
(A) He considered each character separately (B) He was lucky not to encounter linkage problem
(C) The plant was pure breeding (D) All the above

4. Mendel was lucky in the choice of the material of his experiments, among the following, which contributed, to his success ?
(A) He observed distinct inherited traits (B) He qualitatively analysed his date
(C) He liked pea plants (D) He considered only one character at one time

5. The year 1990 AD is highly significant for genetics due to :-
(A) Principle of linkage (B) Chromosome theory of heredity
(C) Rediscovery of Mendelism (D) Discovery of genes

6. Genotype means :-
(A) Genetic composition of the individual (B) Genetic composition of the germ cell
(C) Genetic composition of plastids (D) Genetic compositon of an organ

7. The physical manifestation of an organism's genes is its :-
(A) Environment (B) Phenotype (C) Genetic code (D) Genotype

8. An organism with two identical alleles of a gene in a cell is called :-
(A) Homozygous (B) Domainant (C) Heterozygous (D) Hybrid

9. When an individual is having both the alleles of contrasting characters it is said to be :-
(A) Heterozygous (B) Dioecious (C) Monoecious (D) Linked genes

10. When an allele fails to express itself in F_1 generation in the presence of other allele, the former is said to be :-
(A) Recessive (B) Codominant (C) Complementary (D) Epistatic

11. Alleles are :-
(A) Homologous chromosome (B) Chromosome that have crossed over
(C) Alternate forms of gene (D) Linked genes

12. Mendel's laws apply only when :-
(A) F_1 in monohybrid cross shows two types of individuals
(B) The character are linked
(C) Parents are pure breeding
(D) First pair of contrasting character is dependent upon other pairs

13. Which of Mendel's procedures differed from those of his predecessor and contributed most of his success ?
(A) He observed many characteristics of each trait (B) He observed distinct inherited traits
(C) He quantitatively analysed his data (D) He kept breeding records

14. If a plant is heterozygous for tallness, the F_2 generation has both tall and dwarf plants. This proves the principle of :-
(A) dominance (B) segregation (C) independent assortment (D) incomplete dominance

15. Mendel crossed a pure white flowered recessive pea plant with a dominant pure red flowered plant. The first generation of hybrids from the cross should show :-
(A) 50% white flowers and 50% red flowers (B) all red flowered plants
(C) 75% red flowered and 25% red flowered plants (D) all white flowered plants

16. If a couple has three daughters, what are the chances that the fourth child will be a son ?
(A) 100% (B) 75% (C) 50% (D) 0%

17. If a heterozygous tall plant is crossed with a homozygous dwarf plant, the proportion of dwarf progeny will :-
(A) 50% (B) 75% (C) 100% (D) 25%

18. The crossing of a homozygous tall plant with a dwarf would yield F_2 plants in the ratio of :-
(A) two tall and two dwarf
(B) one homozygous tall, one homozygous dwarf and two heterozygous tall
(C) all homozygous dwarf
(D) all homozygous tall

19. When a true breeding tall plant is crossed with a true breeding short plant and the F_1 produced is self pollinated to produce F_2 ratio of true breeding tall and true breeding short plant in F_2 will be :-
(A) 1 : 2 (B) 1 : 1 (C) 2 : 1 (D) 1 : 3

20. Blue eye colour in human is recessive to brown eye colour. The expected children of a marriage between blue-eyed woman and brown-eyed male who had a blue-eyed mother are likely to be :-
(A) all blue-eyed (B) three blue-eyed and one brown-eyed
(C) all brown-eyed (D) one blue-eyed and one brown-eyed

21. The genotype of a dominant parent is determined by crossing it with the recessive parent. This cross is called :-
(A) back cross (B) test cross (C) long cross (D) out cross

22. The results of a test cross reveal that all the offspring resemble the parent being tested. This parent must be :-
(A) heterozygous (B) homozygous (C) recessive (D) haploid

23. Chromosome theory of heredity was postulated by :-
(A) Charles Darwin (B) Gregor Mendel (C) Sutton and Boveri (D) Har Gobind Khorana

24. Which chromosome set is found in male grass-hopper ?
(A) XY (B) X (C) YY (D) XX

25. Allosomes are :-
(A) bead like structures (B) on chromosomes (C) sex chromosomes (D) rounded bodies

26. *Escherichia coli* is widely used in genetics research because it is :-
(A) easy to procure (B) easily manipulated
(C) easy to handle (D) easy to culture in laboratory

27. Mutation is :-
(A) a change that is inherited
(B) a change, which affects the parents only but never, inherited
(C) a change, which affects the offspring of F_2 generation only
(D) a factor responsible for plant growth

28. Recessive mutation are expressed normally in :-
(A) has to express always since it is a mutation (B) heterozygous condition
(C) neither in homozygous nor in heterozygous condition (D) homozygous condition

29. The reason why some mutations, which are harmful, do not eliminated from gene pool is that :-
(A) they are recessive and carried by heterozygous individuals
(B) they are dominant and show up more frequently
(C) genetic drift occur because of a small population
(D) they have future survival value

30. Mutations are usually induced by :-
(A) gamma rays (B) alpha rays (C) beta rays (D) visible light

31. The plant that was made popular by "De Vries mutation theory" :-
(A) *Triticum vulgare* (B) *Oenothera lamarkiana* (C) *Pisum sativum* (D) *Primula vulgaris*

32. Gene mutation is caused :-
(A) due to reproduction
(B) due to changes in the sequence of nitrogen bases
(C) due to linkage
(D) due to changes in the sequence of genes in DNA

33. Sex chromosomes may be found in :-
(A) unisexual plant (B) unisexual flower (C) monocarpic plant (D) intersexual plant

34. Which one of the following is a sex-linked characteristic ?
(A) White *eye* in *Drosophila*
(B) Duffy blood group in human beings
(C) AB blood group in human beings
(D) Vestigial wing

35. Human offspring would be female, if 23rd pair of chromosome in zygote is :-
(A) YY (B) XY (C) XX (D) XYY

36. "Barr body" is derived from :-
(A) autosomes in males (B) autosomes in females (C) X-chromosome in female (D) X-chromosome in males

37. Down's syndrome is due to :-
(A) nondisjunction of chromosomes
(B) crossing over between genes
(C) linkage of genes
(D) sex linked inheritance

38. The DNA is the genetic material was proved conclusively by :-
(A) J D Watson (B) Hershey and Chase (C) Alfred Griffith (D) Boveri and Sutton

39. Nobel Prize for "one gene one enzyme theory" was given to :-
(A) Beadle and Tatum
(B) Schleiden and Schwann
(C) Watson and Crick
(D) H Harris

40. Retrovirus has the following as its genetic material :-
(A) single stranded DNA
(B) double stranded duplex DNA
(C) DNA-RNA hybrid
(D) RNA

41. Of the following, which sequence is present in Rous Sarcoma Virus ?
(A) DNA $\rightarrow$ RNA $\rightarrow$ proteins
(B) DNA $\rightarrow$ DNA $\rightarrow$ proteins
(C) RNA $\rightarrow$ DNA $\rightarrow$ proteins
(D) RNA $\rightarrow$ DNA $\rightarrow$ RNA $\rightarrow$ proteins

42. The term genome is used for :-
(A) diploid set of chromosomes
(B) polyploid set of chromosomes
(C) triploid set of chromosomes
(D) haploid set of chromosomes

43. The first successfully cloned mammal that gained world-wide publicity was :-
(A) Molly, a sheep (B) Polly, a sheep (C) Chance ; a bull (D) Dolly, a sheep

44. The transgenic animals are those that have :-
(A) foreign DNA in some of its cells
(B) foreign DNA in all its cells
(C) foreign RNA in all its cells
(D) both (A) and (C)

45. The first hormone artificially produced by culturing bacteria is :-
(A) Insulin (B) Thyroxine (C) Testosterone (D) Adrenalin

Ques.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	C	C	D	D	C	A	B	A	A	A	C	C	C	B	B	C	A	B	B	D
Ques.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans.	B	B	C	B	C	D	A	D	A	A	B	B	A	A	C	C	A	B	A	D
Ques.	41	42	43	44	45															
Ans.	D	D	D	B	A															

ECOLOGY & ENVIRONMENT

1. Insectivorous plants grow only in soils deficient in :-
(A) calcium (B) phosphorus (C) nitrogen (D) copper

2. Biomass produced by plants in oceans accounts for :-
(A) 85% (B) 75% (C) 65% (D) 55%

3. Geothermal energy is :-
(A) non-renewable non-conventional energy source (B) non-renewable conventional energy source
(C) renewable non-conventional energy source (D) renewable conventional energy source

4. Inexhaustible, non-conventional source of energy is :-
(A) solar radiations (B) wind power (C) sea tides (D) all the above

5. Soil is composed of :-
(A) mineral + water + air (B) mineral + organic matter + air
(C) mineral + organic matter + air + water (D) organic matter + water

6. Plants growing in extremely cold soils are :-
(A) halophytes (B) psammophytes (C) oxylophytes (D) psychrophytes

7. Which one of the following animals can live from birth to death without even drinking water :-
(A) Kangaroo rat (B) Kangaroo (C) Camel (D) Desert cat

8. Energy and nutrients enter a community by way of the :-
(A) producers (B) consumers (C) detrivores (D) scavengers

9. Which is the correct sequence in the food chain in grassland ?
(A) Grass → wolf → deer → buffalo (B) Grass → insect → bird → snake
(C) Grass → snake → insect → deer (D) Bacteria → grass → rabbit → wolf

10. There is no difference between the following :-
(A) primary consumers and herbivores (B) trophic level I and herbivores
(C) primary carnivores and trophic level II (D) Secondary consumers and herbivores

11. Driving force of ecosystem is :-
(A) carbohydrate in plants (B) biomass (C) solar energy (D) producer

12. An aquatic plant with floating leaves :-
(A) have stomata on leaf surface (B) have stomata on lower surface
(C) have stomata (D) have stomata only on upper surface

13. Acid rain is caused due to increase in concentration of :-
(A) SO_2 and NO_2 (B) CO and CO_2 (C) CO and SO_3 (D) ozone and dust

14. Which is NOT a green house gas ?
(A) CO_2 (B) H_2 (C) CFC (D) Methane

15. Lichens are important in the studies on atmospheric pollution because they :-
(A) can also grow in greatly polluted atmosphere
(B) can readily multiply in polluted atmosphere
(C) are very sensitive to pollutants like SO_2
(D) efficiently purify the atmosphere

16. The study of interrelationship between living organisms and their environment is called
(A) phytogeography (B) ecology (C) phytosociology (D) ecosystem

17. Abiotic component in an ecosystem is
(A) water (B) daphnia (C) bacteria (D) chlorella

18. Who had proposed the term ecosystem?
(A) Gardner (B) Tansley (C) Odum (D) Krebs

19. Which one of the following is the definition of ecosystem?
(A) A localised association of several plants and animals
(B) Different communities of plants, animals and microbes, together with their physicochemical environments
(C) Different communities of plants and microbes, plus their physicochemical environments
(D) A community of organisms interacting with one another

20. Good soil is
(A) which allows the limited amount of water into it
(B) which allows to percolate the water slowly form it
(C) which allows to pass water very quickly from it
(D) which holds whole of water into it

21. Humus is an example of
(A) crystalloids (B) organic colloids (C) soil structure (D) none of them

22. Plants growing in shady regions are
(A) sciophytes (B) xerophytes
(C) heliophytes (D) epiphytes

23. Plants occurring on soils rich in salts are known as
(A) heliophytes (B) halophytes (C) geophytes (D) thermophytes

24. Which of the following is the most characteristic feature of a xeric environment?
(A) Low atmospheric humidity (B) Extremes of temperature
(C) The precipitation (D) High rate of vaporisation

25. Mechanical tissues are very poorly developed in :-
(A) xerophytes (B) halophytes (C) hydrophytes (D) lithophytes

26. Xerophytes have long roots
(A) due to -light (B) to draw water from deep water beds
(C) to give mechanical support (D) none of the above

27. Mangrove plants show vivipary. This is
(A) germination of seeds within fruits while still attached to parent plant
(B) germination of seeds in fruits on the soil
(C) germination of seeds within fruit on sterile artificial culture medium
(D) germination of seeds only after dispersal of fruits

28. The orchid plants, which are found growing on the trees, are
(A) parasites (B) epiphytes (C) saprophytes (D) lithophytes

29. In submerged hydrophytes functional stomata are found
(A) on lower surface of leaf (B) on both the surface of leaf
(C) no where on the plant (D) on upper surface of leaf

30. A food chain consists of
(A) producers and primary consumers (B) producers, herbivores and carnivores
(C) producers, consumers and decomposers (D) producers, carnivores and decomposers

31. Which of the following is the correct sequence in food chain?
(A) Fallen leaves → bacteria → insect larvae → birds
(B) Phytoplankton → zooplankton → fish
(C) Grasses → fox → rabbit
(D) Grasses → chameleon → insects birds

32. Which is a primary consumer?
(A) Scavenger (B) Saprophyte (C) Carnivore (D) Herbivore

33. Energy and nutrients enter a community by way of the
(A) producers (B) consumers (C) detrivores (D) scavengers

34. When a big fish eats a small fish, which eats water fleas supported by phytoplankton, the water fleas are
(A) primary consumers (B) secondary consumers
(C) top consumer in this food chain (D) producers

35. In natural ecosystem, decomposers include
(A) only microscopic animals
(B) only bacteria and fungi
(C) the above two types of organisms plus microscopic animals
(D) only the above two types of organisms

36. The food chain in which microorganisms break down the energy rich compounds synthesised by producers is
(A) detritus food chain (B) predator food chain (C) consumer food chain (D) parasitic food chain

37. In an aqueous environment, microscopic animals and plants are collectively known as
(A) herbivores (B) fauna and flora (C) planktons (D) symbionts

38. Water logged soil is
(A) physically as well as physiologically dry (B) physically wet but physiologically dry
(C) physically dry (D) physically as well as physiologically wet

39. Carbon dioxide in atmospheric air amounts to about
(A) 0.03% (B) 0.003% (C) 0.3% (D) 3%

40. The presence of ozone in the atmosphere of earth
(A) is advantageous since it supplies O_2 for people travelling in jets
(B) helps in checking the penetration of ultraviolet rays to earth
(C) hinder higher rate of photosynthesis
(D) has been responsible for increasing the average global temperature in recent years

41. The term biodiversity refers to the
(A) Varitions in man
(B) A species found in a particular area
(C) Variety of different types of organism found on earth
(D) All of the above

42. Silent valley-which contains very rare species of plants and animals, is situated in
(A) Kerala (B) Rajasthan (C) Jammu and Kashmir (D) Bombay

43. "Chipko Movement" is concerned with
(A) plant conservation (B) project tiger (C) animal breeding (D) plant breeding

44. A biosphere in nature may be compared with a
(A) Bacteria (B) Cell (C) Nucleus (D) Cell wall.

45. The biosphere includes
(A) Pedosphere (soil) (B) Hydrosphere (C) Atmosphere (D) All of these

46. A natural forest is an example of
(A) Hydrosphere (B) Biotic community (C) Ecosystem (D) All of these

47. The Sahara desert is an example of
(A) Population (B) Biotic community (C) Biosphere (D) Biome

48. The 'producers' in general are
(A) Autotrophic animals (B) Heterotrophic plants
(C) Heterotrophic animals (D) Autotrophic plants

49. Man in everyday life produces food synthetically. On the basis of this can man be called a producer?
(A) Yes (B) No
(C) Insufficient information to answer (D) Cannot be definitely said.

50. Suppose all consumers of the earth are dead. Then
(A) Producers will not prepare food
(B) Decomposers will die
(C) There will be no sunlight available by photosynthesis.
(D) None of these

51. Why does a goat not eat a tiger?
(A) Because the tiger is more powerful than the goat
(B) Because the goat is not adapted to eat flesh.
(C) Because every goat is taught by its parents to keep away from tigers.
(D) All of these

52. The correct food chain out of the following is
(A) Tiger → Cat → Lion → Goat (B) Grass → Insects → Lizard → Snake
(C) Grass → Rabbit → Lion → Man (D) Sun → Plant → Insect → Man

53. Many food chains form a
(A) Bigger food chain (B) Food net (C) Food space (D) Food web

54. Following is an incomplete food chain:
Grass → ? → Jackal → tiger. The choice for the correct answer will be
(A) Lion (B) Deer (C) Rat (D) Cockroach

55. The loss of energy in successive steps of energy transfer is aproximately
(A) 20% (B) 25% (C) 10% (D) 2%

56. Sahara desert has been formed by

(A) Disastrous climatic conditions (B) Overgrazing of fields

(C) Uncontrolled industrialisation (D) All of these

57. Environmental planning will

(A) reduce spoilage by bacteria (B) cause more wildlife loss

(C) reduce air and water pollution (D) None of these

58. Which industrial unit is held responsible for the harm to the Taj Mahal in Area?

(A) Indian Fertiliser Company (B) Mathura Oil Refinery

(C) Madras Refineries Limited (D) Nuchem Plastics Limited

59. An example of aerosol spray is

(A) Dichloro difluoro methane (B) Tetra chloromethane

(C) Trichloro methane (D) Di-iododibromo methane.

60. The full form of DDT is

(A) Dibromo Dichloro Toluene (B) Dichloro Diphenyl Trichloroethane

(C) Difluorodichloro Terbutaline (D) None of these

61. 'Biological magnification' is related to

(A) Death of pelicans by DDT (B) Overpopulation of trees

(C) Multiplication of bacteria (D) Disposal of wastes

62. Lichens are found on hillsides under conditions where neither the alga nor the fungus can live alone. This shows that the relationship between the alga and the fungus is one of

(A) Parasitism (B) Saprophytism (C) Mutualism (D) Commensalism

63. During the period when two species occupy the same ecological niche, they are

(A) Dependent on each other (B) Competing with each other

(C) Cooperating with each other (D) Not affected by each other.

64. Conservation of the ecosystem rather than conservation of a particular species is important because

(A) Food chains and food webs are maintained (B) Different cycles operate simultaneously

(C) Abiotic and biotic factors operate at a given place (D) All of the above operate.

65. The top soil is darker and

(A) is drier than subsoil (B) is richer in Na and Mg

(C) is wetter than subsoil (D) contains more organic matter

66. Organic matter decayed to a relatively stable, amorphous state; formed when soil microorganisms decompose animal and plant material into elements usable by plants

(A) manure (B) peat (C) humus (D) green manure

67. Sheet erosion is due to

(A) fast running rivers (B) heavy rains (C) occasional rains (D) wind

68. Which is a renewable source?

(A) Water (B) Coal (C) Fuels (D) Minerals

69. A non-renewable resource is

(A) forest (B) coal (C) water (D) wild life

70. Minerals and metals are
(A) biodegradable resources (B) renewable
(C) non-renewable (D) inexhaustible

71. Soil fertility is reduced by
(A) crop rotation (B) nitrogen fixing bacteria
(C) decaying organic matter (D) intensive agriculture

72. Largest amount of freshwater is found in
(A) lakes and streams (B) underground (C) polar ice and glaciers (D) river

73. Inexhaustible, non-conventional source of energy is
(A) solar radiations (B) wind power (C) sea tides (D) all the above

74. Soil is composed of
(A) mineral + water + air (B) mineral + organic matter + air
(C) mineral + organic matter + air + water (D) organic matter + water

75. Soil erosion can be prevented by
(A) restricted human activity (B) good plant cover
(C) checking movement of animals (D) wind screen alone

76. The species, which are in danger of extinction, are referred to as
(A) endangered species (B) vulnerable species
(C) threatened species (D) rare species

77. A biotic community consists of a union of
(A) Populations (B) Biomes (C) Ecosystems (D) Individuals

78. The sum of all individuals of a given area is called
(A) Ecosystem (B) Biome (C) Population (D) Individual group

79. Living and non-living species are parts of
(A) Biotic community (B) Population (C) Ecosystem (D) Atmosphere

80. Pollutant from motorcar exhaust that causes mental diseases is
(A) lead (B) NO_2 (C) SO_2 (D) Hg

81. Minamata disease is a pollution-related disease, which results from
(A) release of human organic waste into drinking water
(B) accumulation of arsenic into atmosphere
(C) release of industrial waste mercury into fishing water
(D) oil spills into sea

82. World environment day is
(A) 5th June (B) 28th February (C) 5th August (D) 28th April

83. Eutrophication leads to death of fish due to
(A) increased O_2 content (B) increased algae content
(C) decreased algae content (D) decreased O_2 content

84. The two great industrial tragedies namely, MIC and Chernobyl tragedies respectively occurred where and at which time?
(A) Bhopal 1984, Ukraine 1990 (B) Bhopal 1984, Ukraine 1988
(C) Bhopal 1984, Ukraine 1986 (D) Bhopal 1986, Russia 1988

85. Ozone day is

(A) January 30 (B) December 25 (C) April 21 (D) September 16

86. Formation of ozone hole is maximum over

(A) India (B) Africa (C) Antarctica (D) Europe

87. Thermal pollution is more prevalent near

(A) hot water springs (B) coal based power plants

(C) temperate zones (D) tropical zones

88. Acid rain is caused due to increase in concentration of

(A) SO_2 and NO_2 (B) CO and CO_2 (C) CO and SO_3 (D) Ozone and dust

89. Ozone depletion is caused by

(A) carbon dioxide (B) CFCs (C) CO (D) SO_2

90. Smog is a combination of

(A) fire and water (B) smoke and fog (C) water and smoke (D) air and water

91. BOD of a pond is related to_____in per unit volume of water

(A) all the plants (B) all the nektons

(C) all the microbes (D) all the animals

92. NO_2 vapours are harmful to the body because

(A) They produce allergy

(B) They produce respiratory problems

(C) They create blood clots

(D) None of these

93. Excessive contact with industrial silicon dioxide (SiO_2) would lead to the disease called

(A) Encephalitis (B) Cretinism (C) Silicosis (D) Silaceous anaemia

94. Why is smoking injurious to health?

(A) It can casue pregnanacy problems in smoking mothers.

(B) It can cause large scale air pollution

(C) It can be responsible for a heart attack

(D) Both (A) and (B)

95. 'Decibel' is a unit to measure

(A) Sound depth

(B) Sound intensity

(C) Sound wavelength

(D) All of these

96. Noise pollution can be prevented by

(A) Stopping the blowing of all horns

(B) Banning all commercial loudspeakers

(C) Strict vigilance on noise limit

(D) Cleaning sound emitting parts of automobiles.

97. An effective method to stop air pollution is

(A) Degradation of wastes causing air pollution

(B) Keeping the river water clean

(C) Keeping factories away from big cities.

(D) None of these

98. The Ganga purification project is controlled by

(A) Central Water Commission

(B) Union Public Service Commission

(C) Central Pollution Control Board

(D) Central Intelligence Agency.

99. Sunder Lal Bahuguna is associated with the

(A) Salt movement

(B) Green revolution

(C) Greenhouse effect

(D) Chipko movement.

Ques.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	C	A	A	D	C	D	A	A	B	A	C	D	A	B	C	B	A	B	B	B
Ques.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans.	B	A	B	B	C	B	A	B	C	C	B	D	A	A	B	A	C	B	A	B
Ques.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	C	A	A	B	D	B	D	D	B	B	B	B	D	B	C	A	C	B	A	B
Ques.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Ans.	A	C	D	D	D	C	B	A	B	C	D	C	D	C	B	A	A	C	C	A
Ques.	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	
Ans.	C	A	D	C	D	C	A	A	B	B	C	B	C	D	B	C	C	C	D	