Q.1*Planaria*possess high capacity of :
(1) alternation of generation
(2) bioluminescence
(3)metamorphosis
(4) regeneration

Q.2 An example of *ex situ* conservation is :
(1)WildlifeSanctuary (2) SacredGrove
(3)National Park (4) Seed Bank

Q.3To obtain virus - free healthy plants from a diseased one bytissuecuturetechnique,which part/parts of the diseased plantwill be taken?
(1)Both apical and axillarymeristems
(2)Epidermis only
(3)Apicalmeristemonly
(4) Palisade parenchyma

Q.4Themotile bacteria are able tomoveby :
(1) cilia (2)pili
(3) fimbriae (4) flagella

Q.5Amarine cartilaginous fish that can produce electric current is :
(1) *Trygon*(2) *Scoliodon*
(3) *Pristis*(4) *Torpedo*

Q.6You are given a fairly old piece of dicot stem and a dicot root. Which of the following anatomicalstructureswillyouusetodistinguish between the two?
(1)Protoxylem (2)Cortical cells
(3) Secondaryxylem (4)Secondaryphloem

Q.7 In apopulation of 1000 individuals360 belong togenotypeAA, 480 toAa and the remaining 160 to aa. Based on this data, the frequency ofalleleAin the population is :
(1) 0.6 (2) 0.7
(3) 0.4 (4) 0.5

Q.8 Fructose is absorbed into the blood through mucosacellsof intestine bytheprocess called:
(1)simplediffusion
(2) co-transportmechanism
(3) active transport
(4) facilitated transport

Q.9Which of the following causes an increase in sodiumreabsorption in the distal convoluted tubule?
(1)Decrease in aldosterone levels

(2)Decrease in antidiuretic hormone levels
(3) Increase in aldosterone levels
(4) Increase in antidiuretic hormone levels

Q.10Afewnormal seedlings of tomatowere kept in a dark room.After a fewdaystheywere found to have becomewhite-coloured like albinos. Which of the following termswill you use to describe them?
(1)Etiolated (2)Defoliated
(3)Mutated (4)Embolised

Q.11 Stimulationofamusclefiberbyamotorneuron occurs at :
(1) themyofibril
(2) thesacroplasmic reticulum
(3) the neuromuscular junction
(4) the transverse tubules

Q.12 In vitro clonal propagation in plants is characterized by:
(1) Electrophoresis andHPLC
(2)Microscopy
(3) PCR and RAPD
(4)Northern blotting

Q.13 Deficiency symptoms of nitrogen and potassiumare visible first in :
(1) Roots (2) Buds
(3) Senescent leaves (4)Young leaves

Q.14 Fight-or-flight reactions cause activation of :
(1) theadrenalmedulla, leading to increased secretion of epinephrine and norepinephrene.
(2) the pancreas leading to a reduction in the blood sugar levels.
(3) theparathyroidglands, leadingto increased metabolic rate.
(4) the kidney, leading to suppression of reninangiotensin-aldosterone pathway.

Q.15 If 20 J of energy is trapped at producer level, then how much energy will be available to peacock as food in the followiflg chain ?
plant☐mice ☐snake ☐peacock
(1) 0.2 J (2) 0.0002 J
(3) 0.02 J (4) 0.002 J

Q.16 Male gametophytewith least number of cells is present in:
(1) *Lilium*(2) *Pinus*
(3) *Pteris*(4) *Funaria*

Q.17 A scrubber in the exhaust of a chemical industrialplant removes:
(1) gases like ozone andmethane
(2)particulatematterof the size2.5micrometer or less
(3) gases like sulphur dioxide
(4) particulatematter of the size 5micrometer or above

Q.18 Fruit colour in squash is an example of :
(1)Complementarygenes
(2) Inhibitorygenes
(3)Recessive epistasis
(4)Dominant epistasis

Q.19 Alocationwith luxuriant growth of lichens on the trees indicates that the:
(1) locationishighlypolluted
(2) location is not polluted
(3) trees are very healthy
(4) trees are heavilyinfested

Q.20 At which stage of HIV infection does one usuallyshowsymptomsofAIDS?
(1)WhenHIVdamageslargenumberofhelper T- Lymphocytes.
(2)WhentheviralDNAisproducedbyreverse transcriptase.
(3)Within 15 days of sexual contact with an infected person.
(4)When the infected retro virus enters host cells.

Q.21 The first human hormone produced by recombinantDNAtechnologyis:
(1)Thyroxin (2) Progesterone
(3) Insulin (4) Estrogen

Q.22 The main function of mammalian corpus luteum is to produce :
(1) human chorionic gonadotrnpin
(2) relaxin only
(3) estrogen only
(4) progesterone

Q.23 Inwhich one of the following processesCO_2 is not released?
(1)Alcoholic fermentation

(2)Lactate fermentation
(3)Aerobic respiration in plants
(4)Aerobic respiration in animals

Q.24 The zone of atmosphere in which the ozone layer is present is called :
(1) Stratosphere (2)Troposphere
(3) Ionosphere (4)Mesosphere

Q.25 Transformationwas discovered by:
(1)Griffith
(2)Watson and Crick
(3)Meselson and Stahl
(4)Hershey and Chase

Q.26 Select the option which is **not correct** with respect to enzyme action :
(1) A non-competitive inhibitor binds the enzyme at a site distinct fromthatwhich binds the substrate.
(2) Malonate is a competitive inhibitor of succinic dehydrogenase.
(3) Substrate binds with enzyme at its active site.
(4)Additionof lot of succinatedoes not reverse theinhibitation of succinic dehydrogenase by malonate.

Q.27 Which one of the following is **wrongly** matched?
(1) Repressor protein-Binds to operator to stop enzyme synthesis.
(2) Operon–Structural genes, operator and promoter.
(3)Transcription–Writing information from DNA to t-RNA.
(4)Translation-Usinginformationinm-RNA tomake protein.

Q.28 Which one of the following statements is **not correct** ?
(1)Retinal is a derivative ofVitaminC.
(2)Rhodopsinisthepurplishredproteinpresent in rods only.
(3)Retinalisthelightabsorbingportionofvisual photo pigments.
(4) In retina the rods have the photopigment rhodopsin while cones have three different photopigments.

Q.29 Duringwhichphase(s) of cell cycle, amount of DNAin a cell remains at 4Clevel if the initial

amount is denoted as 2C?
(1)OnlyG_2 (2) G_2 andM
(3) G_0 and G_1 (4) G_1 and S

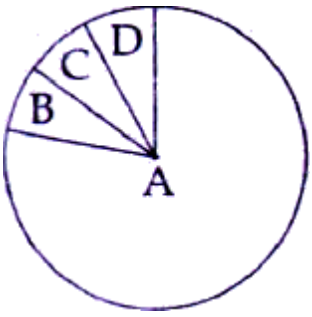
Q.30 Non-albuminous seed is produced in :
(1)Wheat (2) Pea
(3)Maize (4) Castor

Q.31 Select the Taxon mentioned that represents both marine and freshwater species :

(1) Cephalochordata (2)Cnidaria
(3)Echinoderms (4) Ctenophora
Q.32Fivekingdomsystemofclassificationsugested byR.H.Whittaker is not based on :
(1)Mode of nutrition
(2)Complexityofbodyorgnisation
(3) Presence of absence of a well defined nucleus.
(4)Mode of reproduction.

Q.33 Select the correct option :
Directionof Direction of reading
RNAsynthesis of the templateDNA
(1) 5'----3' 5'----3'
(2) 3'----5' 3'----5'
(3) 5'----3' 3'----5'
(4) 3'----5' 5'----3'

Q.34 Givenbelowis the representation of the extent of global diversity of invertebrates. What groups the four portions (A-D) represent respectively?



	A	B	C	D
(1)	Molluscs	Other animal groups	Crustaceans	Insects
(2)	Insects	Molluscs	Crustaceans	Other animal groups
(3)	Insects	Crustaceans	Other animal groups	Molluscs
(4)	Crustaceans	Insects	Molluscs	Other animal groups

Q.35 An analysis of chromosomalDNAusing the SoyhemhybridizationteChniquedoes not use:
(1)Autoradiography (2) PCR
(3)Electrophoresis (4)Blotting

Q.36 Which is the particular type of drug that is

obtainedfromtheplantwhose one flowering branch is shown below?

(1)Stimulant (2) Pain - killer
(3)Hallucinogen (4)Depressant

Q.37 Assisted reproductive technology, IVF involves transfer of:
(1) Zygote into the uterus.
(2) Embryo with 16 blastomeres into the fallopian tube.
(3)Ovum into the fallopian tube.
(4)Zygote into the fallopian tube.

Q.38 Which of the following is responsible for peat formation?
(1) *Funaria*(2) *Sphagnum*
(3)*Marchantia*(4) *Riccia*

Q.39 Select the correct option describing gonadotropin activity in a normal pregnant female:
(1)High level of hCG stimulates the synthesis ofestrogen and progesterone.
(2)High level of hCG stimulates the thickening of endometrium.
(3)High level of FSH and LH stimulates the Thickening of endometrium.
(4) High level of FSH and LH facilitate implantation of the embryo.

Q.40 Tubectomyisa method of sterilization in which:
(1) small part of vas deferens is removed or tied up.
(2) uterus is removed surgically
(3) small part of the fallopian tube is removed or tied up.
(4) ovaries are removed surgically.

Q.41 Dr.F.Went noted that if coleoptile tips were removed and placed on agar for one hour, the agar would produce a bending when placed on one side of freshly-cut coleoptile stumps. Of what significance is this experiment?
(1) It supports the hypothesis that IAAisauxin.
(2) It demonstrated polar movement of auxins.

(3) It made possible the isolation and exact Identification of auxin.
(4) It is the basis for quantitative determination of small amounts of growth-promoting substances.

Q.42 Person with blood group AB is considered as universal recipient because he has:
(1) no antigen on RBC and no antibody in the plasma.
(2) both A and B antigens in the plasma but no antibodies.
(3) both A and B antigens on RBC but no antibodies in the plasma.
(4) both A and B antibodies in the plasma.

Q.43 Function of filiform apparatus is to
(1) Produce nectar
(2) Guide the entry of pollen tube
(3)Recognize the suitable pollen at stigma
(4)Stimulate division of generative cell

Q.44 Injury localized to the hypothalamus would mostlikelydisrupt
(1) executive functions, such as decision making.
(2) regulation of bodytemperature.
(3) short-termmemory.
(4) co-ordination during locomotion.

Q.45 Which one of the following living organisms completely*lacks* a cellwall ?
(1) *Saccharomyces*
(2) Blue - green algae
(3) Cyanobacteria
(4) Sea - fan (*Gorgonia*)

Q.46 Which of the following is a hormone releasing Lntra Uterine Device (IUD)?
(1)Cervical cap (2)Vault
(3)Multi load 375 (4) LNG-20

Q.47 Archaebacteria differ from eubacteria in :
(1) Cell shape
(2)Mode of reproduction
(1)Cell membrane structure
(4)Mode of nutrition

Q.48 Tracheids differ from other tracheary elements in:
(1) lacking nucleus
(2)being lignified

(3) havingcasparian strips
(4) being imperforate

Q.49 Which one of the following shows isogamy with non-flagellated gametes?
(1) *Ulothrix*(2) *Spirogyra*
(3) *Sargassum*(4) *Ectocarpus*

Q.50 A species facing extremely high risk of Extinction in the immediate future is called:
(1)Critically Endangered
(2)Extinct
(3)Vulnerable
(4)Endemic

Q.51 Viruses have :
(1)Single chromosome
(2) Both DNA and RNA
(3)DNA enclosed in a protein coat
(4) Prokaryotic nucleus

Q.52 Anoxygenic photosynthesis is characteristic of
(1) *Chlamydomonas*(2) *Ulva*
(3) *Rhodospirillum*(4) *Spirogyra*

Q.53 Commonly used vectors for human genome sequencing are :
(1) Expression Vectors
(2)T/A Cloning Vectors
(3) T -DNA
(4) BAC andYAC

Q.54 Which one of the following fungi contains hallucinogens ?
(1) *Neurospora*sp.
(2) *Ustilago*sp.
(3)*Morchellaesculenta*
(4) *Amanita muscaria*

Q.55 Which structures perform the function of mitochondria in bacteria?
(1)Cellwall (2)Mesosomes
(3)Nucleoid (4)Ribosomes

Q.56 In 'S' phase of the cell cycle:
(1) chromosome number is increased.
(2) amount of DNA is reduced to half in each cell.
(3) amount of DNA doubles in each cell.
(4) amount of DNA remains same in each cell.

Q.57When the margins of sepals or petals overlap one another without any particular direction,

the condition is termed as :
(1)Twisted (2)Valvate
(3)Vexillary (4) Imbricate

Q.58 Amanwhose fatherwas colour blindmarries A womanwho had a colour blindmother and Normalfather.Whatpercentageofmalechildren of this couplewill be colour blind?
(1) 50% (2) 75%
(3) 25% (4) 0%

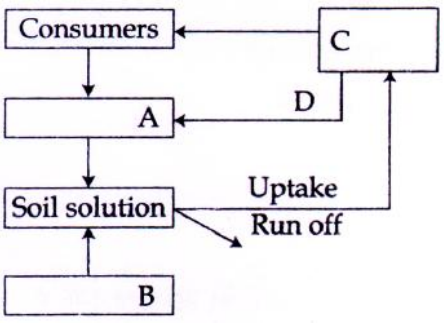
Q.59Which one of the following is a non - reducing carbohydrate?
(1) Lactose
(2) Ribose 5 - phosphate
(3)Maltose
(4) Sucrose

Q.60 Forelimbs of cat, lizard used in walking; forelimbs of whale used in swimming and forelimbs ofbats used in flyingare an exampleof :
(1)Homologous organs
(2)Convergent evolution
(3)Analogous organs
(4)Adaptive radiation

Q.61 Which one of the following statements is **correct**?
(1)A proteinaceousaleurone layer is present inmaizegrain.
(2)Asterile pistil is called a staminode.
(3) The seed in grasses is not endospemic.
(4)Mango is a parthenocarpic fruit.

Q.62 Pollen tablets are available in the market for
(1)Supplementing food
(2) *Ex situ* conservation
(3) In vitro fertilization
(4)Breeding programmes

Q.63 Given below is a simplified model of phosphorus cycling in a terrestrial ecosystem with four blanks (A-D). Identify the blanks.



Option:

	A	B	C	D
1.	Detritus	Rock minerals	Producer	Litter fall
2.	Producers	Litter fall	Rock minerals	Detritus
3.	Rock minerals	Detritus	Litter fall	Producers
4.	Litter fall	Producers	Rock minerals	Detritus

Q.63 Match the following and select the **correct** answer :

(a) centriol (i) Infoldings in mitochondria
(b)Chlorophyll (ii)Thylakoids
(c)Cristae (iii)Nucleic acids (d)Ribozymes (iv)Basal bodyciliaor flagella

(a) (b) (c) (d)

(1) (i) (iii) (ii) (iv)
(2) (iv) (iii) (i) (ii)
(3) (iv) (ii) (i) (iii)
(4) (i) (ii) (iv) (iii)

Q.64 Which one of the following is **wrong** about *Chara*?
(1)Upper antheridium and lower oogonium
(2)Globule is male reproductive structure
(3) Upper oogonium and lower round antheridium.
(4) Globule and nucule present on the same plant.

Q.65 The initial step in the digestion ofmilk in humans is carried out by ?
(1)Rennin (2) Pepsin
(3) Lipase (4)Trypsin

Q.66 The shared terminal duct ot the reproductive and urinary system in the human male is :
(1)Vas deferens (2)Vasaefferentia
(3)Urethra (4)Ureter

Q.67 An example of edible underground stemis :
(1) Sweet potato (2) Potato
(3) Carrot (4)Groundnut

Q.68 An aggregate fruit is one which develops from:
(1)Complete inflorescence
(2)Multi carpellary superior ovary
(3)Multi carpellarysyncarpous gynoecium
(4)Multi carpellaryapocarpus gynoecium

Q.69 Which one of the following growth regulators is known as 'stress hormone' ?

(1)GA_3
(2) Indole acetic acid
(3)Abscissic acid
(4)Ethylene

Q.70 Which of the following shows coiled RNA strand and capsomeres ?
(1)Measles virus
(2)Retrovirus
(3)Poliovirus
(4)Tobaccomosaic virus

Q.71 An alga which can be employed as food for Human being is:
(1) Spirogyra (2)Polysiphonia
(3)Ulothrix (4)Chlorella

Q.72 Choose the correctly matched pair :
(1)Areolar tissue - Loose connective tissue
(2)Cartilage -Loose connective tissue
(3)Tendon -Specialized connective tissue
(4)Adipose tissue -Dense connective tissue

Q.73 Which one of the following are analogous structures?
(1) Thorns of *Bougainvillea* and Tendrils of *Cucurbita*
(2) Flippers of Dolphin and Legs of Horse.
(3)Wings of Bat and Wings of Pigeon.
(4)Gills of Prawn and Lungs of Man.

Q.74 Approximately seventy percent of carbondioxide absorbed by the blood will be transported to the lungs:
(1) by binding to R.B.C
(2) ascarbamino - haemoglobin
(3) as bicarbonate ions
(4) in the form of dissolved gas molecules

Q.75 The osmotic expansion of a cell kept in water is chiefly regulated by:
(1) Plastids (2)Ribosomes
(3)Mitochondria (4)Vacuoles

Q.76 Placenta and pericarp are both edible portions in:
(1)Tomato (2) Potato
(3)Apple (4)Banana

Q.77 Match the following and select the correct option :
(a)Earthworm (i) Pioneer species
(b) Succession (ii)Detritivore
(c) Ecosystemservice (iii)Natality
(d) Population growth (iv)Pollination
(a) (b) (c) (d)
(1) (iii) (ii) (iv) (i)
(2) (ii) (i) (iv) (iii)
(3) (i) (ii) (iii) (iv)
(4) (iv) (i) (iii) (ii)

Q. 78The organization which publishes the Red List of species is :
(1) UNEP (2)WWF
(3) ICFRE (4) IUCN

Q.79 What gases are produced in anaerobic sludge digesters?
(1)Methane, Hydrogen Sulphide andO_2
(2)Hydrogen sulphide and CO_2
(3)Methane and CO_2 only
(4)Methane, Hydrogen Sulphide and CO_2Q.

Q.80 Just as a person moving from Delhi to Shimla to escape the heat for the duration of hot summer, thousands of migratory birds from Siberia and other extremely cold northern regions move to :
(1) Corbett National Park
(2)Kcolado National Park
(3)Western Ghat
(4)Meghalaya

Q.81 Choose the correctly matched pair :
(1) Tubular parts of nephrons – Cuboidal epithelium
(2) Inner surface of bronchioles – squamous epithelium
(3) Inner lining of salivary ducts – Ciliated epithelium
(4)Moist surface of buccal cavity-Glandular epithelium

Q.82 Geitonogamy involves:
(1) fertilization of a flower by the pollen from a flower of another plant in the same population.
(2) fertilization of a flower by the pollen from a flower of another plant belonging to a distant population.
(3) fertilization of a flower by the pollen from another flower of the same plant.
(4) fertilization of a flower by the pollen from the same flower.

Q.83 A human female with Turner's syndrome :
(1) exhibits male characters
(2) is able to produce children with normal husband.
(3) has 45 chromosomes with XO.
(4) has one additional X chromosome.

Q.85 The enzyme rccombinase is required at which stage of meiosis:
(1)Diplotene (2)Diakinesis

(3) Pachytene (4)Zygotene

Q.86 Identify the hormone with its correct matching of source and function:
(1)Progesterone - corpus-luteum, stimulation
of growth and activities of female secondary sex organs.
(2)Atrial natriuretic factor – ventricular wall increases the blood pressure.
(3)Oxytocin - posterior pituitary, growth and maintenance of mammary glands
(4) Melatonin - pineal gland, regulates the normal rhythm of sleep wake cycle.

Q.87 The solid linear cytoskeletal elements having a diameter of 6 nm and made up of a single type of monomer are known as :
(1) Intermediate filaments
(2)Lamins
(3)Microtubules
(4)Microfilaments

Q.88 How do parasympathetic neural signals affect the working of the heart?
(1)Both heart rate and cardiac output increase.
(2) Heart rate decreases but cardiac output increases.
(3)Reduce both heart rate and cardiac output.
(4)Heart rate is increased without affecting the cardiac output.

Q.89 Select the correct matching of the type of the joint with the examplein human skeletal system:
Type of joint Example
(1)Hinge joint between humerusand pectoral girdle
(2)Glidingjoint between carpals
(3)Cartilaginous joint between frontal and pariental
(4)Pivot joint between third and fourthcervicalvertebrae

Q.90Which vector can clone only a small fragment ofDNA?
(1)Plasmid
(2)Cosmid
(3)Bacterial artificial chromosome
(4)Yeast artificial chromosome

Q.91Magnetic moment 2.83BMis given by which of the following ions ?
(At. nos. Ti = 22, Cr = 24, Mn = 25,Ni = 28)
(1) Cr^{3+} (2)Mn^{2+}
(3)Ti^{3+} (4) Ni^{2+}

Q.92 Which one of the following is not a common component of Photochemical Smog ?
(1) Peroxyacetyl nitrate
(2)Chlorofluorocarbons
(3)Ozone (4)Acrolein

Q.93 Which one of the following species has plane
triangular shape ?
(1) NO_2^- (2) CO_2
(3) N_3 (4) NO_3^-

Q.94 Acidity of diprotic acids in aqueous solutions increases in the order :
(1) $H_2Te < H_2S < H_2Se$
(2) $H_2Se < H_2Te < H_2S$
(3) $H_2S < H_2Se < H_2Te$

(4) $H_2Se < H_2S < H_2Te$

Q.95 Which property of colloids is not dependent on the charge on colloidal particles ?
(1)Electro-osmosis (2)Tyndall effect
(3)Coagulation (4)Electrophoresis

Q.96 Which of the following saltswill give highest Ph in water ?
(1) Na_2CO_3 (2) $CuSO_4$
(3) KCl (4) NaCl

Q.97 Which of the following molecules has the Maximum dipole moment ?
(1) NH_3 (2) NF_3
(3) CO_2 (4) CH_4

Q.98 Which of the following hormones is produced under the condition of stress which stimulates glycogenolysis in the liver of human beings ?
(1)Adrenaline (2)Estradiol
(3)Thyroxin (4) Insulin

Q.99 Two related but geographically isolated species are known as
(A) sibling species
(B) sympatric species
(C) taxonomic species
(D) allopatric species

Q.100 Wildlife Protection Act India was implemented in the year
(A) 1982
(B) 1988
(C) 1972
(D) 1970