

Time : 1 Hour]

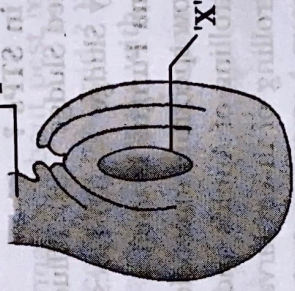
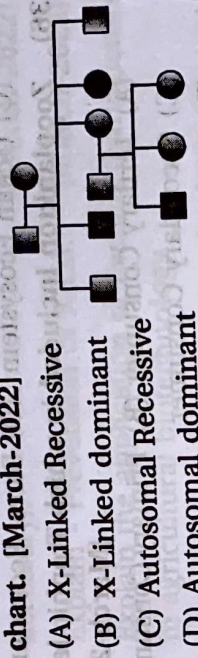
PART - A

[Total Marks : 50

- ❖ Select the following questions with proper alternative and answer it :
- Study the statement (a-d) and select the correct option.
 - A lion eating a deer and sparrow feeding on grains are consumers.
 - Predator starfish, pisaster, helps in maintaining diversity of some invertebrates.
 - Predators ultimately lead to extinction of prey species.
 - Plant chemicals like nicotine and strychnine are produced due to metabolic disorders.

(A) c & d (B) a & d (C) a & b (D) b & c
 - Which of the following species become Extinct by over Exploitation ? [March-2022]
 - Therapsids
 - Pelycosaurs
 - Stellar's sea cow
 - Clarias gariepinus
 - When responses are not limiting the growth, plot is in population ? [March-2022]
 - 'K' shaped
 - 'S' shaped
 - 'L' shaped
 - 'J' shaped
 - How many biodiversity Hot spot in the World ? [March-2022]
 - 48
 - 34
 - 43
 - 25
 - Where does the restriction site of Bam HI is present in pBR322 ? [March-2022]
 - rop
 - tet^R
 - ori
 - amp^R
 - Which of the following chain is not palindromic nucleotide sequence. [March-2022]
 - 5' - G A C G T C - 3'
3' - C T G C A G - 5'
 - 5' - G T C G T C - 3'
3' - T A G C A G - 5'
 - 5' - A A A T T T - 3'
3' - T T T A A A - 5'
 - 5' - G A A T T C - 3'
3' - C T T A A G - 5'
 - Which bond linked poly peptide chain 'A' and 'B' in formation of Insulin ? [March-2022]
 - Disulphide bond
 - Glycosidic bond
 - Phosphodiester bond
 - Peptide bond
 - In diagnosis of which disease Human protein (α -1 Antitripsin) is utilized ? [March-2022]
 - Emphysema
 - Phenylketoneuria
 - Cistic fibrosis
 - All of the given options
 - Which of the following system is not present in Bioreactor ? [March-2022]
 - Foam control system
 - pH control system
 - Oxygen deliver system
 - Light deliver system
 - Which gene Encodes the protein to control the cotton ball worms ? [March-2022]
 - Cry I AC and Cry I Ab
 - Cry I Ac
 - Cry I Ac and Cry II Ab
 - Cry I Ab
 - In which step of polymerase chain Reaction, primer's attached to Template chain ? [March-2022]
 - Centrifugation
 - Annealing
 - Extension
 - Denaturation
 - A frog eats insects it is a
 - Primary consumer
 - Secondary consumer
 - Tertiary consumers
 - Decomposer
 - What is indicated by AUG ? [March-2022]
 - Stop Codon
 - Degenerate Codon
 - Non sense Codon
 - Initiator Codon
 - PAR (Photosynthetically active radiation) from incident solar radiation is
 - 50%
 - 20%
 - 90%
 - 10%
 - The formula for exponential population growth is....
 - $dN/rN = rN$
 - $dt/dN = rN$
 - $dN/rN = dt$
 - $rN/dN = dt$
 - ADA is an enzyme which is deficient in a genetic disorder SCID. What is the full form of ADA ?
 - Adenosine deoxyaminase
 - Adenosine deaminase
 - Aspartate deaminase
 - Arginine deaminase

- 17) Residual Persistent Nucleus in seed is called [March-2022]
 (A) Coleoptile (B) Pericarp
 (C) Coleorrhiza (D) Perisperm
- 18) Fertilization takes place in of Human.
 (A) Vagina (B) Ampullary Region
 (C) Uterine Cavity (D) Infundibulum
- 19) Which hormones produced in women only during pregnancy?
 (A) HCG, HPL, Relaxin
 (B) HPL, Cortisole, Prolectine
 (C) Relaxin, Estrogen, Cortisole
 (D) HCG, Estrogen, Progesterone
- 20) Hormone Releasing IUDs is.... [March-2022]
 (A) Lippes loop (B) LNG - 20
 (C) Cu 'T' (D) Multiload 375
- 21) In which Technology the Embryos with more than 8 blastomeres transferred into the uterus to complete its further development.
 (A) I U I (B) G I F T (C) I U T (D) Z I F T [March-2022]
- 22) Select the correct option given following.
 (A) Second trimester Abortion are much more safe than upto 12 weeks.
 (B) All sexually transmitted disease are completely curable.
 (C) Vaults are used by Male in barrier method of contraceptive.
 (D) MTPs are considered Relatively safe during upto 12 weeks of pregnancy.
- 23) In which period of menstrual cycle, chances of fertilization are very high in women?
 (A) 21 - 28 days (B) 5 - 10 days
 (C) 10 - 17 days (D) 1 - 5 days
- 24) What will be Anticodon on t-RNA, if DNA template having ATG.
 (A) U C A (B) U A C (C) A G U (D) A U G [March-2022]
- 25) Thalacemic Linked gene HBA1 and HBA2 present on which chromosome of each parent?
 (A) 14th Chromosome (B) 16th Chromosome
 (C) 18th Chromosome (D) 11th Chromosome [March-2022]
- 26) Which is the diagnostic test for typhoid?
 (A) PSA Test (B) W. B. Test
 (C) ELISA Test (D) Widal Test [March-2022]
- 27) If person having 45 chromosomes with XO chromosomal abnormality than it is consider as which disorder?
 (A) Turner's syndrome
 (B) Down's syndrome
 (C) Klinefelter's syndrome
 (D) Super female
- 28) Which types of Abnormalities seen in given chart. [March-2022]
 (A) X-Linked Recessive
 (B) X-Linked dominant
 (C) Autosomal Recessive
 (D) Autosomal dominant
- 29) What do "X" and "Y" indicate in the given figure?
 (A) X = Funicle, Y = Embryo sac
 (B) X = Hilum, Y = Embryo sac
 (C) X = Nucellus, Y = Micropyle
 (D) X = Embryo Sac, Y = Funicle
- 30) Which aquatic plant pollinated by Insect or wind?
 (A) Waterlily (B) Hydrilla
 (C) Zostera (D) Vallisneria
- 31) Which gases are taken in closed flask in S. L. Miller Experiment?
 (A) CH₄, NH₃, H₂O, H₂ (B) NO₂, H₂O, CH₃, H₂
 (C) NO₃, H₂, NH₃, CH₃ (D) CH₃, H₂O, NH₃, H₂
- 32) Brain capacity of Homo erectus is
 (A) 950 - 1000 C.C. (B) 900 C.C.
 (C) 1400 C.C. (D) 650 - 800 C.C. [March-2022]

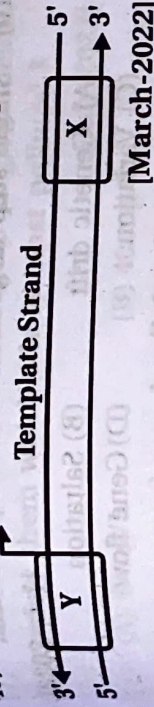


- 33) In the exponential growth equation $N_t = N_0 e^{rt}$, e represents :
 (A) The base of natural logarithms
 (B) The base of geometric logarithms
 (C) The base of number logarithms
 (D) The base of exponential logarithms
- 34) Disorders in which B-lymphocytes are not formed is...
 (A) AIDS (B) SCID
 (C) Cystic fibrosis (D) Muscular dystrophy
- 35) In which of the following Ecosystem shows inverted pyramid ? [March-2022]
 (A) Desert Ecosystem (B) Grassland Ecosystem
 (C) Ocean Ecosystem (D) Forest Ecosystem
- 36) Zooplankton included in which Trophic level ? [March-2022]
 (A) Tertiary Consumer (B) Primary Consumer
 (C) Secondary Consumer
 (D) Primary Producer
- 37) Which of the following is key material in between primary treatment and secondary treatment in STPs ? [March-2022]
 (A) Activated Sludge (B) Effluent
 (C) Primary Sludge (D) Floccs
- 38) Trichoderma Fungus is used... [March-2022]
 (A) in narrow spectrum insecticidal applications.
 (B) in controlling of Aphids and Mosquitoes.
 (C) in controlling of insect larva.
 (D) in treatment of diseased plant.
- 39) Which Enzyme is used as clot buster for removing clots from the blood vessel of patients ? [March-2022]
 (A) Nuclease (B) Streptokinase
 (C) Protease (D) Pectinase
- 40) Select the correct option given following. [March-2022]
- | Column - A | Column - B |
|-----------------------------|-------------------|
| (i) Streptococcus | (P) Acetic Acid |
| (ii) Aspergillus niger | (Q) Butyric Acid |
| (iii) Clostridium butylicum | (R) Streptokinase |
| (iv) Acetobacter Aceti | (S) Citric Acid |
- (A) (i - S), (ii - R), (iii - P), (iv - Q)
 (B) (i - Q), (ii - P), (iii - R), (iv - S)
 (C) (i - R), (ii - S), (iii - Q), (iv - P)
 (D) (i - P), (ii - Q), (iii - R), (iv - S)
- 41) Which of the following Example is Convergent Evolution ? [March-2022]
 (A) Brain and Heart of Vertebrates
 (B) Flippers of Penguins and Dolphins
 (C) Root of Sweet Potato and Stem of Potato
 (D) Eye of the Octopus and Mammals
- 42) If Population Density at 't' time is 'N', then on time 't + 1' population density will be [March-2022]
 (A) $N_{t+1} = N_t + [(B + D) - (D - E)]$
 (B) $N_{t+1} = N_t + [(B + D) - (D + E)]$
 (C) $N_{t+1} = N_t + [(B - D) + (D + E)]$
 (D) $N_{t+1} = N_t - [(B + D) - (D + E)]$
- 43) Find the odd one out
 (A) Vaccines-immunology
 (B) Eco-degradation-pesticides
 (C) Solar energy converter-pest control
 (D) Recombinant DNA-Biotechnology
- 44) Which of the following organ is primary lymphoid organ ? [March-2022]
 (A) Bone marrow (B) Heroin
 (B) Thymus gland (C) Lymph gland
 (D) Bone marrow and Thymus gland both
- 45) Drugs obtained from Acetylation of morphin is.... [March-2022]
 (A) Hashish (B) Heroin
 (C) Charas (D) Coke
- 46) Statement-A : As long as the mother breast feeds the child fully, chances of conception are almost nil.
 Reason-R : During the period of intense lactation, amenorrhoea does not occur.
 (A) Both Statement-A and Reason-R are true and Reason-R is the correct explanation of Statement-A.
 (B) Both Statement-A and Reason-R are true, but Reason-R is not the explanation of Statement-A.
 (C) Statement-A is true, Reason-R is false.
 (D) Statement-A is false, Reason-R is true.
- 47) Example of Trematode parasite is [March-2022]
 (A) Wuchereria (B) Ascaris
 (C) Human Liver Fluke (D) Plasmodium

48) Maximum number of species of major taxa of invertebrates representing global biodiversity is... [March-2022]

- (A) Insects (B) Crustaceans
(C) Annelids (D) Molluscs

49) What indicate 'X' and 'Y' in given diagram ?



Time : 2 Hours]

PART - B

[Total Marks : 50

Section - A

◆ Write the answer of any 8 questions from given question number 1 to 12. (Each of 2 marks) [16]

- 1) Give products of pollen grain, their uses and harmful effects.
- 2) Explain the structure of microsporangium. [March-2022]
- 3) Explain intra uterine devices (IUD). [March-2022]
- 4) Write short note - Pleiotropy. [March-2022]
- 5) Explain - Transcription unit. [March-2022]
- 6) Explain the disease and their symptoms caused by Haemophilus influenzae. [March-2022]
- 7) Give the role of microbes in the production of biogas. [March-2022]
- 8) Write the barrier methods of family planning.
- 9) Explain in brief - Population growth. (Diagram is not necessary) [March-2022]
- 10) Explain the primary productivity in ecosystem.
- 11) Explain theory of inheritance of acquired characters with proper example.
- 12) Explain Gause's competitive exclusion principle.

Section - B

- ◆ Write the answer of any 6 questions from given question number 13 to 21. (Each of 3 marks) [18]
- 13) Explain- Parturition and Lactation. [March-2022]
 - 14) Explain - Experiment of Matthew Meselson and Franklin Stahl's (Diagram is not necessary) [March-2022]

- (A) X = Coding Strand, Y = Terminator
(B) X = Promotor, Y = Terminator
(C) X = Terminator, Y = Promotor
(D) X = Promotor, Y = Coding Strand

50) Frequency of Heterozygous gene in Hardy-Weinberg principle is represented by [March-2022]

- (A) A^2 (B) q^2 (C) $2pq$ (D) p^2

15) Explain - Adaptive radiation. (Diagram is not necessary). [March-2022]

16) Explain - Prevention of AIDS. [March-2022]

17) Explain the application of *Bacillus thuringiensis* in agricultural biotechnology.

18) Explain the role of microbes in the production of chemicals, enzymes and other bioactive molecules. [March-2022]

19) Give information about pest resistant plants.

20) What is ecological pyramid ? Explain pyramids of numbers and biomass with example.

21) Explain - Ex-situ conservation. [March-2022]

Section - C

- ◆ Write the answer of any 4 questions from given question number 22 to 27. (Each of 4 marks) [16]
- 22) Draw neat and clean diagram of sectional view of female reproductive system and describe uterus. [March-2022]
 - 23) Explain sex determination in honey bee with diagram. [March-2022]
 - 24) On the bases of experimental proof - Explain with diagram that DNA is genetic material. [March-2022]
 - 25) Explain cloning sites. (Diagram is not necessary) [March-2022]
 - 26) Explain about Embryo sac.
 - 27) Explain Innate Immunity in details. [March-2022]