SECTION-A

Q.1 Entry of pollen tube through micropyle is: [1]

(a) Porogamy (b) Mesogamy (c) Palynology (d) Chalazogamy

Ans. (a) Porogamy

Q.2 Mendel conducted experiment on which plant? [1]

(a) Cannabis (b) Rose (c) Pea (d) Castor

Ans. (c) Pea

Q.3 Who was famous Indian Palaeobotanist? [1]

(a) T.H. Morgan (b) Prof.Birbal Sahni (c) Sutton (d) G.J.Mendel

Ans. (b) Prof.Birbal Sahni

Q.4 N_2 fixing bacteria in legume plants are

(a) Azotobacter (b) Frankia (c) Rhizobia (d)None

Ans. (c) Rhizobia

Q.5 Pyramid of energy is inverted in [1]

Ans. (d) None of above.

SECTION-B

Q.6 Expand the terms $\left[1\frac{1}{2}\right]$

MTP, AIDS, AI

Or

What is triple fusion?

Ans. MTP: Medical termination of Pregnancy

AIDS: Acquired Immuno Defficiency Syndrom

AI: Artificial Insemination

Or

Triple fusion: Fusion of male gamete with secondary nucleus called as triple fusion.

Q.7 Write three salient features of asexual reproduction. $\left[1\frac{1}{2}\right]$

Ans. Salient feature of asexual reproduction

(1) All offspring are clones is genetically similar

(2) Rate is very fast

(3) Does not help in evolution

Q.8 What are the pathpgens of following dieases? $\left[1\frac{1}{2}\right]$

(a) Cholera

(b) Rabies

(c) Ringworm

Ans. Pathogens of disease:-

(a) Cholera - Bacteria Vibrio cholera

(b) Rabies - Rabdo Virus

(c) Ringworm - Fungi Tricophyton

Q.9 What are cry proteins? Name the organism that produce it. $\left[1\frac{1}{2}\right]$

Ans. Cry protein is crystal protein. It is produce by bacteria bacillus thurienginsis.

Q.10 Define the following terms. $\left[1\frac{1}{2}\right]$

(a) Mimicry

(b) Hibernation

(c) Habitat

Ans. **(a) Mimicry:** The ability of organism to resemble another dangerous or forrocious animal or obeject to avoid predation.

(b) Hibernation: Winter sleep.

(c) Habitat: The living place of organism called as habitat.

Q.11 Give three differences between DNA and RNA. $\left[1\frac{1}{2}\right]$

Ans. **Differences between DNA and RNA**

Sr. No	DNA	RNA
1.	It is deoxyribonucleic acid.	It is ribonucleic acid.
2.	It contain deoxyribose sugar.	It contain ribose sugar.

3.	It is double stranded.	It is single stranded.
4.	It contain pyrimidine. N_2 Base Thymine.	It contain pyrimidine. Base uracil.
5.	It is one type	It is three type.
6.	DNA is genetic material.	RNA perform other vital function.

Q.12 Define connecting links with example. $\left[1\frac{1}{2}\right]$

Ans. The animal having characters of two phylum said to be connecting link.

Ex. Peripactus [Between arthropoda& annelid]

Ex. Virus [Between living & non-living]

Q.13 Write a short note on Turner's syndrome. $\left[1\frac{1}{2}\right]$

Ans. Turner's syndrome: It is congenital, genetic disorder due to delation of one chromosome in a female individual.

Q.14 What is Eutrophication? $\left[1\frac{1}{2}\right]$

Ans. **Eutrophication:** Nutrient enrichment of lake's water due to human activities called as eutrophication. It increases natural ageing of lake.

Q.15 What are endangered speices? Also give example. $\left[1\frac{1}{2}\right]$

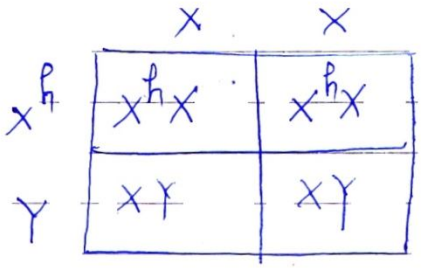
Ans. **Endangered speices:** The species, which are facing the treat to be extinct called as endandered species.

Ex. Great Indian Bustard.

SECTION-C

Q.16 What will be the phenotype of F_1 generration when a haemophiliac man (X^hY) marries a normal woman (XX)? $\left[2\frac{1}{2}\right]$

Ans. PARENTS 

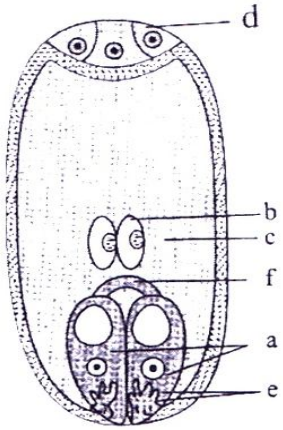


DAUGHTER (ALL CARRIER)

SON (ALL NORMAL)

Q.17 Draw the well labelled diagram of Embryo sac. $\left[2\frac{1}{2}\right]$

Ans.



Q.18 Explain the law of dominance with suitable example. $\left[2\frac{1}{2}\right]$

Ans. **law of Dominance:** It we cross two pure or homozygous variety for one or more character then in F_1 generation only dominant charcter will appear.

Q.19 What are antibiotics? Give their properties.

Or

Differentiate B-cells and T-cells. $\left[2\frac{1}{2}\right]$

Ans. **Antibiotices:** These are the chemical, which are obtained from one type of living organism and kill/retard the growth of other living organism, called as antibiotic.

Ex. Penicilin ontained from fungus peniciliium notatum & kill bacteria.

Or

Sr. No	B-Cell	T-Cell
1.	It stands for bone marrow cell	It stands for thymus cell
2.	It differentiates into B.lymphocyte	It differentiates T. lymphocyte.
3.	It produce antibody.	It does not produce antibody. But help to B.lymphocyte.

Q.20 What is Mycorrhiza its two types in detail. $\left[2\frac{1}{2}\right]$

Ans. **Mycorrhiza:** It is symbiotic association between plant root (pinus) & fungi (Glomus). It is two types:

(1) Ectomycorrhiza

(2) Endomycorrhiza or vam vasicular arbuscular mycorrhiza.

Q.21 What is opium? From which plant it is extracted? Enlist its various derivaties. $\left[2\frac{1}{2}\right]$

Ans. **Opium:** It is milky latex, which obtain from unripe fruit of opium/poppy plant. It is various derivaties are

(a) Morphin

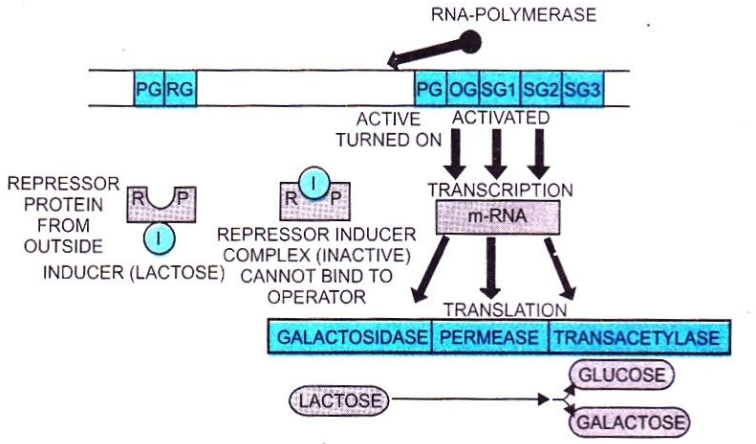
(b) Heroin

Q.22 What plant is used to generate disease free plants and why? $\left[2\frac{1}{2}\right]$

Ans. Meristamatic plant part (Apical & intercalary) used to obtain virus free plant from diseased plant. Because in meristamatic.There is no virus.

Q.23 Descibe LAC operon in detail. $\left[2\frac{1}{2}\right]$

Ans. **Lac operon:**



Q.24 What is PCR? Discuss it in detail. [3]

Ans. **PCR:** It is polymerase chain reaction. It is employ in biotech to amplification desired gene. It complete in three steps:

(1) Denaturation

(2) Anneling

(3) Extention

Q.25 Give six differences between Ape and Man. [3]

Ans. **Ape and Man:**

Sr. No	Man	Ape
1.	Erect Posture.	Semi Erect Posture.
2.	Brow ridge weakly developed.	Brow ridge prominent.

3.	Incisors small.	Incisors large.
4.	Cranial capacity 1400-1450 cm^3.	Cranial Capacity is 100-500 cm^3.
5.	Highly intelligent with sharp memory.	Less intelligent with less memory.
6.	Arms are shorter than leg.	Forelimb are longer than legs.

SECTION-D

Q.26 What is Acid Rain? What are its effects? [4]

Or

Describe Phosphorus cycle in detail.

Ans. **Acid Rain:** It is deposition of acidic chemicals of atmosphere over the earth. It maninly due to SO_2, Voc_s, NH_3, Nitrogen oxide release in atmosphere. It is two type wet and dry.

Effect:

(1) Destruction of vegetation

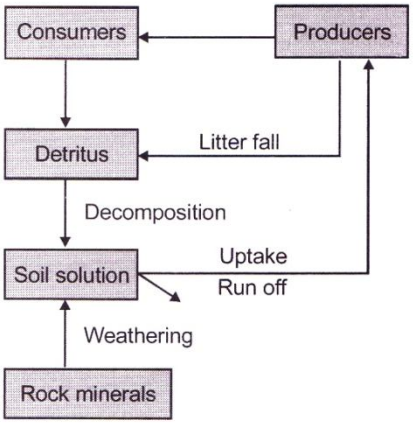
(2) Killing of lake

(3) Spoilage of human assets

(4) Deterioration of Materials

Or

Phosphorus cycle:



Q.27 (a) Define vaccine. Who coined this term? [2]

(b) Write various uses of steroids? [2]

(c) Define Xenotransplantation. [1]

Ans. **(a)Vaccine:** Vacca-cow.

Vaccine is the process of development of immunization against & particular disease by inoculation of harmless antigenic material like attenuated parthogen. Edward Jenner cointed the term vaccine.

(b) Uses of Steroids:

- Normally steroids help in preventing allergic reaction.
- Stiroids abused by sport person to increase stamina.

(c) It transplantation of organ/tissue between the animal of different species.

Q.28 (a) Draw a well labelled diagram of Mammalian sperm. [2]

(b) Write a short note on Tubectomy. [2]

(c) Exzyme ligase helps in [1]

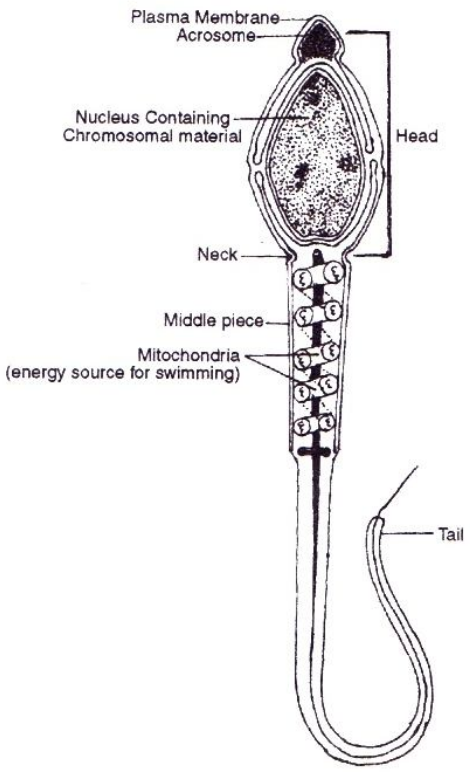
(i) Cleaving DNA

(ii) Joining DNA fragments

(iii) Both joining & cleaving

(iv) None of these

(a)



(b) Tubectomy: It is cut & tied of fallopian tube in female. It is surgical & permanent method off contraception.

(c) Ligase enzyme help in joining DNA fragment.