



GGSRDN
Educational Services Private Limited
9th, 10th, NEET, JEE(Main/Advanced)

अभ्यास ही सबसे बड़ा गुरु है।

FRESHER-NEET

For Class : XII

DPP

Daily Practice Problem

BOTANY

Set Your Target and Keep Try in Until You Reach It.

BOTANY

DPP No. : 01

CHAPTER - REPRODUCTION IN FLOWERING PLANTS

Total Marks : 40

Single choice Objective

Max. Time : 10 min.

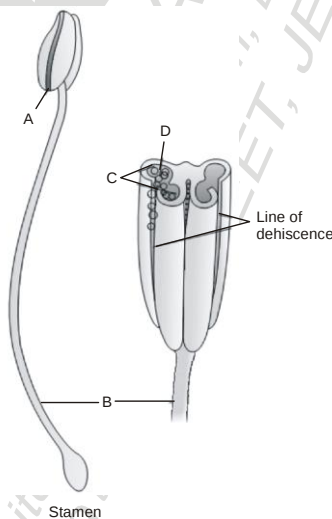
(4 marks 1 min.)

SECTION A : Sexual reproduction-Introduction

- Given below the following statements
 - Sexual reproduction does not always require two individuals
 - Dioecious and monoecious organisms both are seen in plants and animals
 - The probability of fruit set in a self pollinated bisexual flower of a plant is far greater than a dioecious plant
 - Asexual reproduction is common in higher groups of organisms
 - Each carpel of a flower has only one ovule
 Select the wrong statements
 (1) a, b, e (2) d, e (3) b, c, d (4) b, d, e
- A dicotyledonous plant bears flowers but never produces fruits and seeds. The most probable cause for the above situation is
 - Plant is dioecious and bears only pistillate flowers
 - Plant is dioecious and bears both pistillate and staminate flowers
 - Plant is monoecious
 - Plant is dioecious and bears only staminate flowers
- The phenomenon where the offspring superior than either of the parents is
 - Influence
 - Inheritance
 - Penetrance
 - Heterosis (hybrid vigour)

SECTION B : Male Reproductive Part

4.



Identify A to D

A

- Anther
- Anther
- Anther
- Anther

B

- Petiole
- Petiole
- Pedicel
- Filament

C

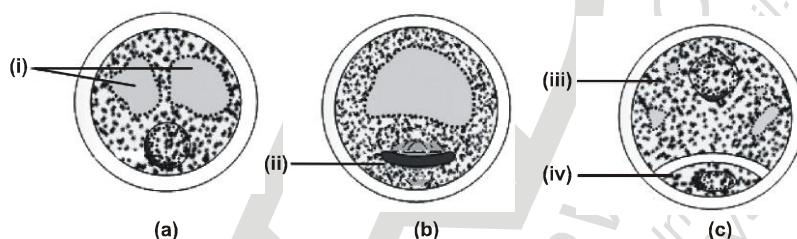
- Pollen sac
- Megasporangium
- Megasporangium
- Pollen sac

D

- Megaspore
- Pollen grains
- Pollen grains
- Pollen grains

- Which of the following plant came in india as a contaminant with important wheat & causes pollen allergy.
 - Chenopodium
 - Parthenium
 - Castor
 - Prosopis

6. Sporopollenin of exine of pollen grain provides protection from
 (1) High temperature (2) Strong acids
 (3) Alkali (4) All of the above
7. The exine of pollen grain is composed of -
 (1) Pecto-cellulose (2) Sporopollenin
 (3) Polysaccharides (4) Proteins
8. Which one is surrounded by callose wall
 (1) Male gamete (2) Pollen grain
 (3) Egg (4) Microspore mother cell.
- 9.



In the above diagrams identify i, ii, iii & iv and select the suitable options.

- (1) i - Vacuole; ii - Symmetrical spindle, iii - Vegetative cell; iv - Generative cell
 (2) i - Cytoplasm; ii - Asymmetrical spindle, iii - Generative cell; iv - Vegetative cell
 (3) i - Nuclei; ii - Symmetrical spindle, iii - Tube cell; iv - Vegetative cell
 (4) i - Vacuole; ii - Asymmetrical spindle, iii - Vegetative cell; iv - Generative cell
10. Pollen tube is formed by
 (1) Intine (2) Generative cell (3) Tube cell (4) None

DPP No. : 02

CHAPTER - REPRODUCTION IN FLOWERING PLANTS

Total Marks : 40
Single choice Objective

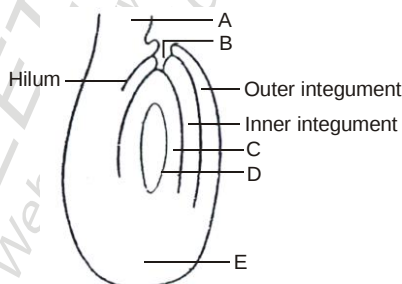
Max. Time : 10 min.
(4 marks 1 min.)

SECTION B : Male Reproductive Part

- Give below the following statements
 - In western countries, Pollen consumption has been claimed to increase the performance of athletes and race horses.
 - The viability of pollen grains in some members of Rosaceae, Leguminosae and Solanaceae is few years
 - Multicarpellary and apocarpous gynoecium is found in Michelia
 - In pollen banks, the pollen grains of large no. of species can be stored in liquid nitrogen at -196°C .
 - Micropyle represent the basal part of ovule.
 Pickup the correct options
 (1) c, d, e (2) a, b, e (3) a, c, d (4) b, c, e
- How many meiosis and mitosis are required for the formation of a male gametophyte from a pollen mother cell/ microspore mother cell.
 (1) 2 meiosis and 2 mitosis (2) 1 Meiosis & 1 Mitosis
 (3) 1 Meiosis & 3 Mitosis (4) 1 Meiosis & 2 Mitosis
- For the formation of 40 male gametes, How many pollen mother cells are required.
 (1) 10 (2) 20 (3) 8 (4) 5
- The pollen grains of angiosperms are released in
 (1) 4 – celled stage (2) 2 – celled stage
 (3) 3 – celled stage (4) 2 – 3 celled stage

SECTION C : Female Reproductive part

- Which of the following is Meiocyte
 (1) Nucellus (2) Megasporocyte
 (3) Microgametophyte (4) Megagametophyte
- Hilum represents
 (1) Point of attachment of funicle of ovule & placenta
 (2) Point of attachment of ovule and funicle
 (3) Point of attachment of two cotyledons in seed
 (4) None
-



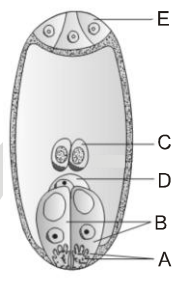
A diagrammatic view of a typical anatropous ovule is given above. In which of the following all five parts labelled as A, B, C, D and E are correctly identified

A	B	C	D	E
(1) Funicle	Micropyle	Female gametophyte	Embryo sac	Chalaza
(2) Raphe	Micropyle	Egg	Embryo sac	Chalaza
(3) Placenta	Micropyle	Egg	Embryo sac	Chalaza
(4) Funicle	Micropyle	Nucellus	Embryo sac	Chalaza

8. A ovule generally has(i)..... embryo sac formed from a(ii)..... through(iii)..... divisions -

- (1) i – Several , ii – Megaspore mother cell, iii – Mitotic
- (2) i– Several , ii– Megaspore, iii – Reduction
- (3) i – One, ii – Megaspore mother cell iii – Mitotic
- (4) i – One, ii – Megaspore iii – Mitotic

9.



In the above diagram which of the following is correct function of the corresponding labelling

- (1) D = formation of Primary endosperm
- (2) B = Entry of pollen tube in embryosac
- (3) E = Secrete chemical substances that attract malegametes
- (4) C = Formation of zygote after fusing with one of the male gametes

10. Which of the following plant has one ovule in an ovary

- (1) Papaya
- (2) Mango
- (3) Watermelon
- (4) Orchids

DPP No. : 03

CHAPTER - REPRODUCTION IN FLOWERING PLANTS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION C : Female Reproductive part

1. Which of the following is diploid in ovule
(1) Generative cell (2) Synergid (3) Central cell (4) PEN
2. If the root cell of *Pinus* contains $2n = 24$ chromosomes than, how many chromosomes will present in its Nucellus?
(1) 12 (2) 24 (3) 36 (4) 18
3. Which of the following has single ovule in the ovary?
(1) Watermelon (2) Papaya (3) Mango (4) Muskmelon
4. How many mitotic divisions are required for the formation of polygonum type of embryo sac from functional megaspore.
(1) 2 (2) 1 (3) 4 (4) 3
5. The 2 polar - nuclei of embryo sac are derived from
(1) Both from micropylar end
(2) Both from chalazal
(3) One each from micropylar and chalazal end
(4) None of the above
6. How many meiotic division would be required to produce 51 female gametophytes in an angiosperm
(1) 102 (2) 51 (3) 26 (4) None of these
7. Entry of Pollen tube in embryo sac is facilitated by
(1) Syngerid (2) Obturator (3) Tube nucleus (4) Filiform apparatus
8. Which of the following represent the correct relationship between pollen grain and embryo sac
(1) Sperm and egg (2) Male gametophyte and egg
(3) Sperm and female gametophyte (4) Male gametophyte and female gametophyte
9. **Assertion** : The Megaspore mother cell divides meiotically to produce four spores
Reason : Microspore mother cell is diploid and microspore is haploid.
(1) (2) (3) (4)
10. Number of chromosomes in root cells is 14. What will be the number in synergids.
(1) 14 (2) 21 (3) 7 (4) 28

DPP No. : 04

CHAPTER - REPRODUCTION IN FLOWERING PLANTS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION D : Pollination

1. Cleistogamy is found in
 - (1) Oxalis
 - (2) Castor
 - (3) Papaya
 - (4) Mango
2. In which type flowers are odourless, nectar secreting with yellow petals
 - (1) Hydrophilous flower
 - (2) Anemophilous flower
 - (3) Ornithophilous flower
 - (4) Entomophilous
3. Monoecious condition of Maize plant favours
 - (1) Both Autogamy & Geitonogamy
 - (2) only Autogamy
 - (3) prevention of Autogamy & proceeding of Geitonogamy
 - (4) proceeding of Autogamy & preventing of Geitonogamy
4. Select the incorrect statement
 - (1) Cleistogamy do not favours inbreeding depression.
 - (2) Commelina and viola bears both cleistogamous and chasmogamous flowers.
 - (3) Cleistogamous flowers can produce seeds even in the absence of pollinator.
 - (4) Cleistogamy is disadvantageous in respect to no further development of variations in offsprings.
5. If pollination takes place between the two flowers of same plant, It is known as
 - (1) Xenogamy
 - (2) Cleistogamy
 - (3) Geitonogamy
 - (4) Herkogamy.
6. Insect pollinated flowers are
 - (1) Small, producing nectar & with dry pollen grains.
 - (2) Large, producing fragrance, nectar & sticky pollen grains with pollen kitt.
 - (3) Large, bright coloured petals, feathery stigma & large no. of pollen grains.
 - (4) Small, producing fragrance, light coloured petals
7. Pollination in Fig is performed by
 - (1) Tageticula
 - (2) Blastophaga (A -wasp)
 - (3) Caulpa aurea
 - (4) Honey bee
8. Pollination in grasses takes place through
 - (1) Entomophily
 - (2) Anemophily
 - (3) Ornithopily
 - (4) Cleistogamy
9. Wind pollinated flowers are
 - (1) Small, scented and colourless
 - (2) Small, nonscented and colourless
 - (3) Big, scented and coloured
 - (4) Big, nonscented and colourless.
10. Emasculated flowers have to be covered with a bag to prevent contamination of its stigma with unwanted pollen grains. These bags are made up of
 - (1) Polyethylene
 - (2) Polyblend
 - (3) butter paper
 - (4) Tissue paper

DPP No. : 05

CHAPTER - REPRODUCTION IN FLOWERING PLANTS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION D : Pollination

- The sausage tree (kigelia pinnate) is pollinated by
(1) Bat (2) Bird (3) Wind (4) Water
- In which of the following pollination takes place by lever mechanism
(1) Salvia (2) Ficus (3) Antirrhinum (4) Ocimum
- Which of the following has long ribbon like pollen grains & shows hydrophily.
(1) Water lily (2) Zostera (3) Water hyacinth (4) None of the above
- Match the Column

Column I	Column II
i. Banana	a. Typha
ii. Sporopollenin	b. Attracts pollen tube towards micropyla of ovule
iii. Filiform apparatus	c. Present in fossilized pollen grains
iv. Pollinium	d. Parthenocarpic fruit
v. Compound pollen grain	e. Calotropis
(1) i - e, ii - d, iii - b, iv - c, v - a	(2) i - c, ii - b, iii - d, iv - e, v - a
(3) i - d, ii - c, iii - b, iv - e, v - a	(4) i - b, ii - c, iii - a, iv - e, v - d
- Emasculatation of flower is achieved by removal of
(1) Anthers (2) Carpels (3) Flowers (4) Perianth
- Assertion** : Both Geitonogamy and Xenogamy require pollinators for pollination in Angiospermic plants.
Reason : Both decrease Inbreeding depression in Angiospermic plants.
(1) (2) (3) (4)
- Assertion** : Chesmogamous flowers proceed both autogamy and xenogamy
Reason : Cleistogamous flowers never open
(1) (2) (3) (4)
- Assertion** : Anemophily is non-directional pollination.
Reason : Anemophilous flowers have abundant nector and scent.
(1) (2) (3) (4)

SECTION E : Fertilization and embryogenesis

- Pollen tube enters in embryo sac through
(1) Egg cell (2) Synergid (3) Antipodel cell (4) Degenerated synergid
- How many nuclei take part in double fertilization?
(1) 2 (2) 3 (3) 4 (4) 5

DPP No. : 06

CHAPTER - REPRODUCTION IN FLOWERING PLANTS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION E : Fertilization and embryogenesis

1. In angiosperms triple fusion is required for the formation of
(1) Embryo (2) Endosperm (3) Seed coat (4) Fruit wall
2. The effect of pollen grain on endosperm is called
(1) Position effect (2) Warburg effect (3) Metaxenia (4) Xenia
3. Zygote of *Capsella bursapastoris* divides through
(1) Longitudinal division (2) Equal transverse division
(3) Unequal transverse division (4) Oblique division
4. First cell of sporophytic generation is
(1) Gamete (2) spore (3) Zygote (4) Embryo
5. Endosperm development precedes embryo development, because
(1) Embryo provides nutrition to developing endosperm
(2) Endosperm provides nutrition to developing embryo
(3) Endosperm development starts after embryo development
(4) All of the above
6. Embryo develops at which end of the embryonic sac
(1) Micropylar end (2) chalazal end (3) Funiculus (4) outside the ovary
7. *Casuarina* shows
(1) Chalazogamy (2) Porogamy (3) Mesogamy (4) None of the above
8. The ploidy level of endosperm, synergid, integument, microspore, nucellus is respectively
(1) $2n, n, 2n, n, 3n$ (2) $3n, n, 2n, n, 2n$ (3) $3n, n, n, n, 2n$ (4) $3n, 2n, 2n, 2n, n$
9. Ploidy of ovary, anther, egg, pollen, male gamete and zygote are respectively
(1) $2n, 2n, n, 2n, n, 2n$ (2) $2n, 2n, n, n, n, 2n$ (3) $2n, n, n, n, n, n$ (4) $2n, 2n, n, 2n, 2n, 2n$
10. Perisperm differs from endosperm in
(1) having no reserve food
(2) being a diploid tissue
(3) its formation by fusion of secondary nucleus with several sperms
(4) being a haploid tissue

DPP No. : 07

CHAPTER - REPRODUCTION IN FLOWERING PLANTS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION F : Seed and Polyembryony

1. In which of the following plant residual persistent nucellus remain present
 (1) Sunflower and wheat (2) Castor and maize
 (3) Wheat and barley (4) black pepper and beet
2. The epiblast to grass embryo is a
 (1) Vestigial organ (2) Photosynthetic organ
 (3) Absorptive organ (4) Reserve food storage organ
3. Seed coat is derived from
 (1) Pericarp (2) Epicarp
 (3) Integuments of ovule (4) Nucellus
4. The portion of Embryonal axis above the level of cotyledons is called
 (1) Hypocotyl (2) Epicotyl
 (3) Tigellum (4) Scutellum
5. Ruminant endosperm is commonly found in seeds of
 (1) Cruciferae (2) Compositae
 (3) Euphorbiaceae (4) Annonaceae
6. Nucellar Polyembryony is found in
 (1) *Citrus* (2) Castor
 (3) Sugarcane (4) Sunflower
7. Which of the following floral parts forms pericarp after fertilization
 (1) Nucellus (2) Outer integument
 (3) Ovary wall (4) Inner integument
8. In the monocotyledonous seeds the endosperm is separated from the embryo by a distinct layer known as
 (1) Testa (2) Aleurone layer
 (3) Tegmen (4) Scutellum
9. The best example of polyembryony is
 (1) Cocos (2) Pea
 (3) Capsicum (4) Pinus
10. Parthenocarpic fruit is found in
 (1) Guava (2) Banana
 (3) Walnut (4) Pomegranate

DPP No. : 08
CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION A : Principles of Inheritance & Variations -- Introduction , Mendelism , Causes of mendel's success, Terminology of genetics , Monohybrid cross , Back cross , Test cross , Law of dominance , Law of segregation

- In 1900 AD, three biologists independently rediscovered Mendel's principles. They were.
(1) Sutton, Morgan and Bridges (2) Bateson, Punnett and Bridges
(3) Avery, MacLeod and McCarty (4) De Vries, Correns and Tschermak
- In monohybrid cross what is the ratio of homozygous dominant and homozygous recessive individuals in F_2 -generation
(1) 1 : 2 : 1 (2) 2 : 1 / 1 : 2 (3) 3 : 1 / 1 : 3 (4) 1 : 1
- Which statement about alleles is not true
(1) They may be several at a locus
(2) One may be dominant over another
(3) They may show incomplete dominance
(4) They occupy different loci on the same chromosome
- Mendel found that the F_1 always resembled either one of the parents and that the trait of the other parent was not seen in them. This is due to :
(1) Segregation (2) Dominance (3) Partial dominance (4) Unit factor
- The genes for flower position and pod shape in pea plant are located on the chromosome pair
(1) 1 (2) 4 (3) 5 (4) 7
- Which of the following are dominant characters according to Mendel
(1) Green coloured pod and rounded seed (2) Terminal fruit and wrinkled seed
(3) White testa and yellow pericarp (4) Dwarf plant and yellow fruit
- Which of the following features of pea plant are situated on same chromosome number Selected by Mendel ?
(1) Colour of flower, colour of pod (2) Position of flower & shape of pod
(3) Shape of seed & Colour of cotyledon (4) colour of pod & colour of cotyledon
- Which statement is not true about a test cross?
(1) It tests whether an unknown individual is homozygous or heterozygous
(2) The test individual is crossed with a homozygous recessive individual
(3) If the test individual is heterozygous, the progeny will have 1 : 1 ratio
(4) If the test individual is homozygous, the progeny will have 1 : 1 ratio
- Who coined the term genetics?
(1) Bateson (2) Mendel
(3) Muller (4) Correns
- A tall pea plant was grown in nutrient deficient soil and remained dwarf. When it is crossed with dwarf plant then
(1) All hybrid plants are tall (2) 50% tall and 50% dwarf
(3) 75% tall and 25% dwarf (4) All hybrid plants are dwarf

DPP No. : 09
CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION B : Dihybrid cross and law of independent assortment, Exceptions of Mendel's law – Incomplete dominance, co-dominance, Multiple allelism

- When a tall plant with round seeds (TTRR) crossed with a dwarf plant with wrinkle seeds (ttrr), the F_1 generation consists of tall plants with round seeds. What would be the proportion of dwarf plant with wrinkle seeds in F_2 generation.
(1) 0 (2) $1/2$ (3) $1/4$ (4) $1/16$
- In *Mirabilis jalapa*, TT, Tt, tt determine red, pink and white colour respectively. When F_1 hybrid was crossed with TT, ratio produced is
(1) All red (2) 2 red : 2 pink (3) All white (4) 2 pink : 2 white
- If red flowered & wrinkled seeded pea plant crossed with white flowered & round seeded pea plant. F_1 generation obtained, on selfing of F_1 generation, F_2 generation is obtained. How many plants will Red flowered round seeded with intermediate size of starch grain in F_2 generation.
(1) $9/16$ (2) $6/16$ (3) $3/16$ (4) $1/16$
- Exception to Mendel's law is
(1) Dominance (2) Purity of gametes
(3) Linkage (4) Law of independent assortment
- Incomplete dominance was shown by
(1) Bateson (2) Mendel (3) Correns (4) Johannsen
- In the ratio of F_2 - generation of dihybrid cross the parental genotype ratio is
(1) $(1/16) : (1/16)$ (2) $(9/16) : (1/16)$ (3) $(3/16) : (3/16)$ (4) $(4/16) : (8/16)$
- Tall & Red (TTRR) flowered Antirrhinum plant crossed with dwarf and white flowered (ttrr) Antirrhinum plant in F_1 generation, all the plants were Tall & Pink flowered. F_1 generation is crossed with double recessive parent, what will the phenotypic ratio obtained in F_2 generation and what will be possibility of occurrence of tall & Red flowered plants.
(1) $9 : 3 : 3 : 1, 25\%$ (2) $3 : 1, 50\%$ (3) $1 : 1, 0\%$ (4) $1 : 1 : 1 : 1, 0\%$
- How many possible genotypes are there for the ABO Blood groups?
(1) Six (2) Four (3) Sixteen (4) Eight
- Select the wrong pair :
(1) Genome – Haploid set of chromosomes
(2) Cumulative gene – Regulates inheritance of complete trait
(3) Heterosis – Superiority of hybrid from any parent in certain traits
(4) Codominance – Exception of law of dominance & observed in AB blood group in human.
- If a character is controlled by 8 alleles of a gene then how many genotypes can be formed in offsprings –
(1) 35 (2) 36 (3) 18 (4) 37

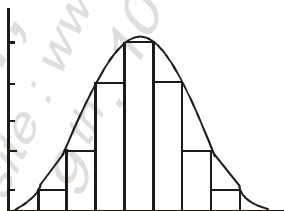
DPP No. : 10
CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION C : Dihybrid cross and law of independent assortment, Exceptions of Mendel's law – Incomplete dominance, Multiple allelism, Pleiotropy, Polygenic inheritance

- In dihybrid cross of pea plant, the ratio of pure heterozygous for both yellow round and green wrinkled seeded plants in F_2 generation will be
(1) $\frac{1}{16}$ (2) $\frac{1}{4}$ (3) $\frac{1}{8}$ (4) $\frac{3}{16}$
- In inheritance of ABO blood group of human, The blood group of son is B while father's blood group is A The blood group of its mother may be
(1) AB or O (2) B or AB (3) O or AB (4) B or O
- Mendel did not include in his laws :
(1) Segregation (2) Dominance (3) Purity of gametes (4) Linkage
- Starch synthesis in pea seed is controlled by one gene having two alleles (B and b) BB produces large sized starch grains while bb produces small sized starch grains. BB seeds are round and the bb seeds are wrinkled. Its heterozygous produces.
(1) Large sized starch grains & wrinkled seeds
(2) Small sized starch grains & wrinkled seeds
(3) Intermediate sized starch grains & wrinkled seeds
(4) Intermediate sized starch grains & round seeds
- What will be the dihybrid test cross ratio for two completely linked genes
(1) 3 : 1 (2) 1 : 1 : 1 : 1 (3) 1 : 2 : 1 (4) 1 : 1
- ABO inheritance shows :
(1) Partial dominance (co-dominance) (2) Complete dominance
(3) Mixed inheritance (4) Composite inheritance
- From heredity point of view which marriage is not suitable ?
(1) Man Rh (–) & Woman Rh (+) (2) Both Rh (+)
(3) Both Rh (–) (4) Man Rh (+) & Woman Rh (–)
- Polygenic inheritance was first noted by
(1) Davenport (2) Galton (3) Mendel (4) Kolreuter
- When three polygenic pairs are involved in inheritance of a trait like skin colour of human a bell shaped curve in histogram produced from the frequency of various skin phenotypes produced in F_2 generation after a cross between black and white individuals.



On the basis of above histogram, what will be the ratio of fairly light

- (1) $\frac{1}{64}$ (2) $\frac{15}{64}$ (3) $\frac{20}{64}$ (4) $\frac{6}{64}$
- Human skin colour is controlled by several gene pairs. Let us assume there are just three gene pairs on different chromosomes and for each pair there are two alleles - an incompletely dominant one that codes for melanin deposition. If a very dark skinned person marries a very light skinned woman, what will be the chance that their offspring will have very dark skin
(1) 0 (2) $\frac{1}{4}$ (3) $\frac{5}{8}$ (4) $\frac{9}{64}$

DPP No. : 11
CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION D : Gene interaction, Chromosomal theory of inheritance, Sex Determination, Linkage, Crossing over

- Genes that are similar in phenotypic effect when present separately, but together interact to produce a different trait and ratio is 9 : 7 in F_2 generation. What are such genes known as
 (1) Supplementary genes (2) Complementary genes
 (3) Hypostatic genes (4) Epistatic genes
- Match the genetic phenomena with their respective phenotype ratios in F_2 generation

Column I	Column II
A. Inhibitory gene	1. 9 : 3 : 4
B. Duplicate gene	2. 1 : 1 : 1 : 1
C. Recessive epistasis	3. 12 : 3 : 1
D. Dihybrid test cross	4. 13 : 3
E. Dominant epistasis	5. 15 : 1
(1) A – 5, B – 4, C – 3, D – 2, E – 1	(2) A – 4, B – 5, C – 1, D – 2, E – 3
(3) A – 1, B – 2, C – 4, D – 3, E – 5	(4) A – 2, B – 1, C – 4, D – 5, E – 3
- Numbers of linkage groups equal to
 (1) Numbers of pairs of homologous chromosome
 (2) Numbers of genome
 (3) Both (1) and (2)
 (4) None of the above
- Complete linkage is found in
 (1) Both male and female *Drosophila* (2) Male *Drosophila*
 (3) Female *Drosophila* (4) Sweet pea
- In birds which type of sex determination is found?
 (1) ZW-ZZ type (2) XX-XY type (3) Both (1) & (2) (4) None of these
- A trait is expressed in a particular sex although their genes also occur in other sex and it requires sex hormones for expression it may be
 (1) Occurrence of moustaches and beard in man
 (2) Occurrence of roan colour in short horned cattle
 (3) Free martin in cattle
 (4) Occurrence of colour blindness in man
- Genetic maps of chromosomes are based on the frequency of
 (1) Non-disjunction (2) Translocation
 (3) Dominance (4) Genetic recombination
- In Onion chromosome number is $2n = 16$. The number of linkage groups in it shall be
 (1) 16 (2) 4 (3) 8 (4) 32
- What is the unit of crossing over
 (1) Cistron (2) Muton (3) Recon (4) None of the above
- How the sex of offsprings determined in humans :
 (1) Sex chromosome of mother (2) Size of ovum
 (3) Size of sperm (4) Sex chromosome of father

DPP No. : 12
CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION E : Gene interaction, Sex determination, linkage, Sex linkage, crossing over

- How many linkage groups are found in Neurospora?
(1) 10 (2) 2 (3) 7 (4) 4
 - In Drosophila sex index of super female is
(1) 1 (2) 0.5 (3) 1.5 (4) 0.67
 - The number of different types of gametes that can be produced by any individual with the Pp SS Tt is.
(1) 2 (2) 4 (3) 6 (4) 8
 - In a dihybrid cross, F_2 ratio of 15:1 is due to
(1) Supplementary genes (2) Dominant epistasis
(3) Duplicate genes (4) Recessive epistasis
 - Which of the following structure was discovered by Henking
(1) y-body (2) Bar body (3) x-body (4) nu-body
 - During spermatogenesis in Human male
(1) 25% of the total sperm produced carry the X-chromosome
(2) 50% of the total sperm produced carry Y-chromosome
(3) All sperm are of Y-type
(4) All sperm are of X-type
 - The distance between b and d gene is 18 mapunit, a & c-2 mapunit, b & c 10 mapunit, a & b - 8, what will be the sequence of genes on a chromosome.
(1) a, b, c, d (2) b, c, a, d (3) c, b, a, d (4) b, a, c, d
 - If a normal women (there is no historical record of colour blindness) is married with colourblind man. What will be possibility of occurrence of colour blindness in their offsprings
(1) 50% (2) 25% (3) 75% (4) 0%
- In the following question a statement of Assertion (A) is given followed by a corresponding statement of Reason (R) just below it. Of the statements, mark the correct answer as**
- If both assertion and reason are true and reason is the correct explanation of assertion
 - If both assertion and reason are true but reason is not the correct explanation of assertion
 - If assertion is true but reason is false
 - If both assertion and reason are false
- Assertion :** $2A + XXY$ is normal female in Drosophila
Reason : $2A + XYY$ are super male in man
(1) (2) (3) (4)
 - A normal man marries with a normal female. But the father of both of them were haemophilic which of the following statement is correct about their offsprings
(1) 50% daughters are normal & 50% son are haemophilic
(2) All the daughters are normal & 50% sons are haemophilic
(3) 50% daughters may haemophilic & 50% sons are normal.
(4) All the daughters are normal and all the son's are haemophilic

DPP No. : 13
CHAPTER- GENETICS

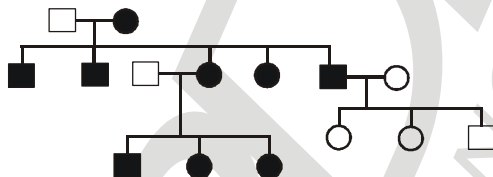
Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION F : Mutation, Cytoplasmic inheritance, Pedigree Analysis, Genetic Disorders

1. Change in the sequence of nitrogenous bases represent
(1) Chromosomal mutation (2) Crossing Over
(3) Gene mutation (4) Euploidy

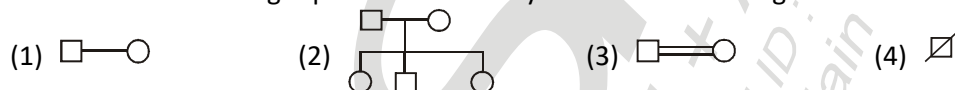
2.



Above pedigree chart represents

- (1) Autosomal dominant trait (2) Sex linked dominant trait
(3) Autosomal recessive trait (4) None of the above
3. Triticale was first man made cereal formed by the cross between
(1) Wheat and maize (2) Barley and rai (3) Rice and pearl millet (4) Wheat and Rai

4. Which of the following represents correct symbol for the marriage of non relatives



5. The development of rudimentary ovaries, small uterus, undeveloped breast, webbed neck, etc are features of a sex chromosomal disease. Which of the following is not character about this disease.

- (1) It is an example of Monosomic condition of chromosome.
(2) No. of barr body is 1
(3) Secretion of FSH and Estrogen is deficient
(4) They are infertile

6. The no. of barr body in klinfelter syndrome is

- (1) 2 (2) 1 (3) 3 (4) 0

7. Which of the following is an autosomal abnormality

- (1) Down's syndrome (2) Klinfelter syndrome
(3) Turner's syndrome (4) Jacob's syndrome

8. Alkaptonuria is inborn error of metabolism in which Homogentisic acid accumulates in the tissue & is also excreted in the urine. It is

- (1) Autosomal dominant disorder (2) X linked recessive disorder
(3) Autosomal recessive disorder (4) X linked dominant disorder

9.

S.No.	Syndrome	Genotype	Barrbody	Symptom
a	Turner syndrome	44 + XO	1	Webbed neck,sexually sterile
b	Criminal Syndrome	44 + XYY	0	Long limbs, More aggressive
c	Klinfelter syndrome	44 + XXY	1	Gynaecomastia,sexually sterile
d	Cri du chat syndrome	44 + XXX	2	Congenital heart disease crying like cat

Find out the correct statements of above table

- (1) a, b (2) c, d (3) b, c (4) a, d

10. Extranuclear inheritance (cytoplasmic inheritance) is a consequence of presence of genes in
- | | |
|-----------------------------------|--|
| (1) Ribosomes and chloroplasts | (2) Lysosomes and Ribosomes |
| (3) Mitochondria and chloroplasts | (4) Endoplasmic reticulum and Mitochondria |

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DPP No. : 14
CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION G : Mutation, Pedigree Analysis, Genetic Disorders, Molecular basis of Inheritance --
The Search for Genetic Material

- No. of barr body in klinefelter syndrome, Turner syndrome, Normal female and Jacob syndrome are respectively.
(1) 0, 1, 1, 0 (2) 1, 0, 1, 0 (3) 1, 1, 1, 1 (4) 2, 0, 1, 0
- In an inborn error of metabolism in which affected individual lacks an enzyme that converts the amino acid phenylalanine in to tyrosine resulting accumulation of phenylalanine, mental retardation occurs in patient. The disease and its traits are
(1) Alkeptouria, autosomal dominant trait
(2) Albinism, autosomal recessive trait
(3) Phenylketonuria, autosomal recessive trait
(4) None of the above
- $2n+1$ (Trisomy) can be observed in
(1) Edward syndrome (2) Patau syndrome
(3) Down's syndrome (4) All of the above
- Match the column

Column I	Column II
a. Grasshopper	i. Palmer crease in hand
b. Turner's syndrome	ii. Mental retardation & accumulation of phenylpyruvic acid
c. Phenylketonuria	iii. Barr body absent
d. Sickle cell anaemia	iv. XX – XO
e. Down's syndrome	v. Pleiotropic gene

Select the correct option
 (1) a – iv, b – iii, c – ii, d – v, e – i (2) a – iii, b – iv, c – ii, d – v, e – i
 (3) a – iii, b – ii, c – v, d – i, e – iv (4) a – iv, b – iii, c – ii, d – i, e – v
- Above pedigree show the inheritance of
 (1) Sex linked recessive (2) Autosomal dominant (3) Y-linkage (4) Autosomal recessive
- Thalassaemia is
(1) Autosomal dominant trait (2) Autosomal recessive trait
(3) X-linked dominant trait (4) X-linked recessive trait
- Sickle cell anaemia disease is an example of which gene
(1) Pleiotropic gene (2) Lethal gene (3) Codominant gene (4) All of the above
- The trait recessive in human being is
(1) Colour blindness (2) Haemophilia (3) Albinism (4) All the above
- Hershey and chase used radioactive isotopes for their experiment and proved that DNA is a genetic material. These radioactive isotopes were.
(1) ^{14}C , ^{32}C (2) ^{60}C , ^{35}S (3) ^{15}N & ^{14}C (4) ^{32}P & ^{35}S
- Who amongst the following discovered genetic material in pus cells and coined the term 'nuclein' ?
(1) Fredrich Miescher (2) Hershey and Chase
(3) Griffith (4) H. Fraenkel-Conrat

DPP No. : 15
CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION H : RNA World , The DNA – Structure & Nucleosome model, RNA

- Which of the following group of histone take part in formation of nucleosome?
 (1) H_1, H_{2A}, H_{2B}, H_4 (2) H_{2A}, H_{2B}, H_3, H_4
 (3) H_1, H_{2A}, H_{2B}, H_3 (4) H_1, H_3, H_4
- The additional stability of DNA is due to
 (1) Presence of phosphate group (2) Presence of deoxyribose sugar
 (3) Presence of thymine instead of uracil (4) Presence of phosphodiester bond
- During replication in long DNA molecules, the two strands of DNA cannot be separated in its entire length due to
 (1) Presence of hydrogen bonds (2) Very high energy requirement
 (3) Presence of phosphodiester bonds (4) Presence of polarity at ends of DNA
- If DNA has 30% thymine, calculate the percentage of cytosine in the DNA
 (1) 30% (2) 40% (3) 60% (4) 20%
- The length of DNA E. coli is
 (1) 2 m (2) 1.2 mm (3) 34 mm (4) 1.36 mm
- DNA is made up of two polynucleotide chains. What is a very unique property to the polynucleotide chains.
 (1) Complementary to each other (2) H-bond present between them
 (3) Uniform distance between both the chain (4) All of these
- Two adjacent nucleotides of DNA are joined by
 (1) Ionic bond (2) Phosphodiester bond
 (3) Glycosidic bond (4) None of the above
- Which of the following evidences suggest that RNA was first genetic material
 (1) Metabolism, Transcription, Capping (2) Splicing, Translation, Tailing
 (3) Metabolism, Translation, Splicing (4) Capping, Tailing and Tailing
- The diameter of B- DNA molecule is
 (1) 18 Å (2) 34 Å (3) 20 Å (4) 3.4 Å
- If T = 40%, C = 10% then G =? in a pollen cell
 (1) 40% (2) 10% (3) 91% (4) 20%

DPP No. : 16
CHAPTER- GENETICS

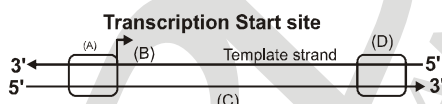
Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

Section I : Replication of DNA, RNA , Transcription, Genetic Code

- Okazaki fragments are related with :
 - (1) Formation of leading strand discontinuously in 5' → 3' direction
 - (2) Formation of lagging strand continuously in 5' → 3' direction
 - (3) Formation of lagging strand discontinuously in 5' → 3' direction
 - (4) Formation of leading strand continuously in 5' → 3' direction

- Schematic structure of a transcription unit is given below :
Select the correct option



- (1) (A) Promoter (B) Structural gene (C) Coding strand (D) Terminator
 - (2) (A) Structural gene (B) Coding strand (C) Terminator (D) Promoter
 - (3) (A) Coding strand (B) Terminator (C) Promoter (D) Structural gene
 - (4) (A) Terminator (B) Promoter (C) Structural gene (D) Coding strand
- During transcription why the both strand of DNA are not copied?
 - (1) Sequence of amino acid would be same
 - (2) One DNA forms two different protein
 - (3) Two single strand RNA are formed
 - (4) Transcription would be fast
- If the sequence of bases in sense strand of DNA is 5'-GTTTCATCG-3', then the sequence of bases in its RNA transcript would be
 - (1) 5'-GTTTCATCG-3'
 - (2) 5'GUUCAUCG-3'
 - (3) 5'CAAGTAGC-3'
 - (4) 5'CAAGUAGC -3'
- Which statement is incorrect
 - (1) Some amino acids contain sulphur such as methionine & Cysteine
 - (2) AUG has dual functions. It codes for methionine (met) and it also act as initiation codon.
 - (3) The process of tailing shows the dominance of RNA world
 - (4) RNA polymerase III is responsible for transcription of t-RNA , 5S rRNA & Sn-RNA in Eukaryotes
- If the sequence of m-RNA is 5' UACGAUCUGACG 3' then the sequence of coding strand of DNA will
 - (1) 3' AUGCUAAGACUG 5'
 - (2) 5' TACGATCTGACG 3'
 - (3) 3' TACGATCTGACG 5'
 - (4) 5' AUGCUAAGACUG 3'
- The anticodon of t-RNA and codon of m-RNA are combined through
 - (1) H-bond
 - (2) Phosphodiester bond
 - (3) Glycoside bond
 - (4) Phosphoester bond
- Which of the following enzyme is a RNA dependent DNA polymerase enzyme?
 - (1) DNA polymerase I
 - (2) RNA polymerase I
 - (3) Reverse transcriptase
 - (4) Taq polymerase.
- Which of the following is not a feature of genetic code
 - (1) Universality of codon
 - (2) Ambiguity of codon
 - (3) Degeneracy of codon
 - (4) Codon is comma less
- Which of the following is initiation codon
 - (1) Only GUG
 - (2) Only AUG
 - (3) Mostly AUG and some time GUG
 - (4) Only CUC

DPP No. : 17
CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION J : Translation, Regulation of Gene Expression, Human Genome Project, DNA Fingerprinting

1. Polypeptide synthesis in prokaryotes is initiated by
(1) AUG (2) GUU (3) UGA (4) CUG
2. cDNA probes are copied from the messenger RNA molecules with the help of
(1) Restriction enzymes (2) Reverse transcriptase
(3) DNA polymerase (4) Adenosine deaminase
3. Central dogma is
(1) Replication → Transcription → Translation
(2) Transcription → Translation → Replication
(3) Part of neuron
(4) None
4. Translocase is an enzyme required for
(1) DNA replication (2) RNA synthesis
(3) initiation of protein synthesis (4) Protein synthesis chain elongation
5. Which of the following acts as adapter molecule during Protein synthesis
(1) m-RNA (2) r-RNA (3) t-RNA (4) Sn-RNA
6. An inactive repressor produced by regulator gene that does not block the operator site in the tryptophan Operon is called
(1) Aporepressor (2) Intron (3) Exon (4) Clone
7. In E.coli an operator gene combine with
(1) Inducer gene to switch on structural gene action
(2) Inducer gene to switch off structural gene action
(3) Regulator protein (repressor) to switch off structural gene action
(4) Regulator protein to switch on gene action
8. Which of the following is useful in solving cases of parental disputes?
(1) Hybridoma technology (2) Western blotting
(3) ELISA (4) DNA fingerprinting
9. Read the following four statements (A-D):
A. In transcription, 'TATAATG' represents Pribnowbox in Prokaryotes.
B. Regulation of *lac* operon by repressor is referred to as positive regulation.
C. The human genome has approximately 50,000 genes.
D. Haemophilia is a sex-linked recessive disease.
How many of the above statements are right ?
(1) Two (2) Three (3) Four (4) One
10. All the terminator codons begin with the nucleotide of
(1) Adenine (2) Uracil (3) Guanine (4) Cytosine

DPP No. : 18
CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION J : Translation, Regulation of Gene Expression, Human Genome Project, DNA Fingerprinting

1. Which of the following provides basis of genetic mapping of human genome as well as of DNA finger printing.
 - (1) Denaturation of DNA
 - (2) DNA Hybridization
 - (3) Polymorphism
 - (4) None of the above
2. The total no. of genes has been found in Human according to HGP.
 - (1) 80,000
 - (2) 1,40,000
 - (3) 30,000
 - (4) 50,000
3. What are VNTRs
 - (1) Variable Number Tandem Repeats
 - (2) Satellite DNA that show very high degree of polymorphism.
 - (3) That are used in DNA finger printing
 - (4) All of the above
4. Given below the statements regarding Bioinformatics
 - a. It is sum of Biology, information technology & Computer science
 - b. It is used to analyze polymorphism
 - c. It deals with data storage, retrieval and analysis of sequences of bases of human genome
 - d. It facilitates Translation
 Pick up the incorrect statements
 - (1) a, c
 - (2) b, d
 - (3) b & c
 - (4) a & d
5. A place where clones of known DNA fragments, genes, maps, spores, seeds, frozen eggs, sperms, embryos, animal cells etc. are stored is called
 - (1) Gene library
 - (2) Gene bank
 - (3) Biosphere reserves
 - (4) All of the above
6. In Lac operon, which of the following acts as inducer?
 - (1) Glucose
 - (2) Maltose
 - (3) Galactose
 - (4) Allolactose
7. Which of the following statement is correct
 - (1) Less than 2% of the genome codes for proteins
 - (2) The Largest known human gene being dystrophin has 2.4 million bases
 - (3) Human genome contains 3164.7 million nucleotide bases.
 - (4) All of the above
8. Which of the following pair is correctly matched
 - (1) SNP - Small nuclear polypeptide
 - (2) Structural gene Z- Permease
 - (3) Maximum 2968 genes in human on chromosome no 1
 - (4) Less than 40% - Repetitive DNA
9. **Statements**
 1. Sickle cell anemia is a result of Point mutation.
 2. Insertion or deletion of one or two bases changes the reading frame, from the point of insertion or deletion is called frame shift mutation
 3. All the amino acids are coded by more than one codon hence the code is degenerate
 4. P-proteins are necessary for replication
 How many statements are incorrect
 - (1) 1
 - (2) 2
 - (3) 3
 - (4) 4

10. What is EST :
- (1) Expressed sequence terminator
 - (2) Some genes are expressed in the form of RNA
 - (3) Some genes are expressed in the form of DNA
 - (4) Expressed sequence thiamine

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DPP No. : 19 (FOR AIIMS ONLY)

CHAPTER- GENETICS

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION K : MISCELLANEOUS

1. **Assertion:** Both sickle cell anaemia and incomplete dominance do not show qualitative inheritance.
Reason: Both show inheritance pattern of polygenic inheritance.
(1) (2) (3) (4)
2. **Assertion:** Colchicine is mitotic poison and used for inducing artificial polyploidy.
Reason: Colchicine arrests spindle formation during mitosis.
(1) (2) (3) (4)
3. **Assertion:** If an amino acid is coded by more than one codons then it is called degeneracy of codon.
Reason: Genetic code is universal.
(1) (2) (3) (4)
4. **Assertion:** Splicing is helpful to convert hn-RNA into m-RNA in bacteria.
Reason: Splicing is performed by spliceosomes and DNA ligase.
(1) (2) (3) (4)
5. **Assertion:** Multiple phenotypic effect of a gene is observed in pleiotropic gene.
Reason: It's dominant allele regulates the inheritance of a part of trait.
(1) (2) (3) (4)
6. **Assertion:** In lac operon, permease facilitates entry of β -galactosidase in bacterial cell.
Reason: Introduction of desired DNA segment in the DNA sequence of β -galactosidase causes its insertional inactivation.
(1) (2) (3) (4)
7. **Assertion:** Repetitive DNA is neither transcribed nor translated for any protein.
Reason: In Human genome, more than 2% of DNA is a found as structural gene for coding the protein.
(1) (2) (3) (4)
8. **Assertion:** The codons of Methionine and tryptophan show unambiguity.
Reason: Both do not show degeneracy of genetic code.
(1) (2) (3) (4)
9. **Assertion:** Repressor exerts negative control in lac operon.
Reason: Lactose acts as inducer as well as substrate and exerts positive control in lac operon.
(1) (2) (3) (4)
10. **Assertion:** DNA polymorphism is the basis of DNA finger printing.
Reason: Repetitive DNA sequences are useful for the detection of criminals and also help to solve the parental contradictions.
(1) (2) (3) (4)

DPP No. : 20

CHAPTER- APPLICATION BIOLOGY

Total Marks: 40
Single choice Objective

Max. Time: 10 min.
(4 marks 1 min.)

Section A : Plant breeding—Main steps in plant breeding, Methods of breeding for
disease resistance, Mutation Breeding, Plant Breeding for Developing
Resistance to Insect Pests.

1. Dwarf wheat varieties brought into India from Mexico were
(1) Sonara – 64 and Sonalika (2) Sharbati Sonara and pusa lerma
(3) Sonalika and Sharbati Sonora (4) Sonara – 64 and Lerma Roja
2. Father of Green revolution is
(1) Norman Borlaug (2) M S Swaminathan
(3) Ramdev mishra (4) S R Kayshap
3. Dee-geo-woo-gen is dwarfing gene of
(1) Rice (2) Barley (3) Oat (4) Maize
4. Amber coloured Wheat is produced from red coloured Mexican Wheat is
(1) Sharbati Sonora (2) Pusa Lerma (3) Both (1) and (2) (4) Taichung Native I
5. Semi dwarf varieties of rice developed by IRRI was
(1) Jaya (2) Parmal (3) IR-8 (4) Ratna
6. "Jaya" and "Ratna" developed for green revolution in India are the varieties of
(1) Maize (2) Rice (3) Wheat (4) Bajra
7. Late blight of potato is caused by
(1) *Alternarina solani* (2) *Phytophthora infestans*
(3) *Colletotrichum falactum* (4) *Cercospora arachidicola*
8. Pusa Swarnim is variety is of
(1) Wheat (2) Maize (3) Oat (4) Mustard
9. Pusa gaurav is a variety of
(1) Wheat (2) Okra (3) Cauliflower (4) Rapeseed Mustard
10. In Mung bean, resistance has been developed by mutation against
(1) Downy mildew (2) Powdery mildew
(3) Yellow mosaic virus, Powdery mildew (4) Bacterial blight

DPP No. : 21

CHAPTER- APPLICATION BIOLOGY

Total Marks: 64
Single choice Objective

Max. Time: 16 min.
(4 marks 1 min.)

Section B : Plant breeding—Main steps in plant breeding, Methods of breeding for disease resistance, Mutation Breeding, Plant Breeding for Developing Resistance to Insect Pests, Plant Breeding for Improved Food Quality, Single cell Proteins, Tissue Culture

1. In maize, high aspartic acid small contents of nitrogen and sugar provides resistance against
(1) Stem borer (2) Bollworm (3) Aphids (4) Gall wasp
2. High yielding drought resistance hybrid varieties of Maize, Jowar & Pearl millet has developed in India by
(1) Tissue culture (2) Mass selection (3) Pure line selection (4) Hybridization
3. Which of the following is variety of Okra?
(1) Pusa Komal (2) Pusa sem-2
(3) Pusa Shubhra (4) Pusa A-4
4. Atlas 66 is a protein rich variety of
(1) Rice (2) Maize (3) Wheat (4) Mustard
5. Somatic cell hybrids are produced with the help of
(1) Polyhydroxy glycol (2) Polyethylene glycol
(3) Polyvinyl glycol (4) Polypropylene glycol
6. Virus free plants can be obtained through
(1) Apical and axillary meristem culture (2) Haploid culture
(3) Protoplast fusion (4) Embryo culture
7. Polyploidy can be produced artificially by
(1) Colchicine (2) Inbreeding
(3) Out breeding (4) Self pollination
8. Name the tissue culture technique used to grow nonviable inter-specific hybrids
(1) Androgenic haploids (2) Shoot tip culture
(3) Somatic embryogenesis (4) Embryo rescue
9. The superiority of hybrid from its parents is called
(1) Hybridization (2) Hybrid vigour or heterosis
(3) Overdominance (4) All of above
10. Haploids are more suitable for mutation studies because
(1) Haploids are more abundant than diploid
(2) Haploids are reproductively more stable
(3) All mutations whether dominant or recessive are expressed in haploids
(4) Mutagens penetrate haploid more effectively than diploids
11. Quarantine regulation is meant for
(1) Preventing entry of diseased plants / pathogen / wild plants of the country
(2) Spraying diseased plants with insecticides
(3) Promoting dry farming
(4) Growing fruit trees in all the states.
12. Hybrid vigour is best maintained in vegetatively reproducing plants because they are
(1) Resistant to diseases
(2) Easily propagated
(3) With long life span
(4) Little liable to lose vigour due to absence of Sexual Reproduction.
13. Somaclones are prepared by
(1) Callus culture (2) Sexual reproduction

- (3) Micropropagation (4) Somatic hybridisation
14. Variations occur during tissue culture are called
(1) Somatic variations (2) Germinal variations
(3) Somaclonal variations (4) None of the above
15. Tiachung Native -I is variety is of
(1) Wheat (2) Maize
(3) Oat (4) Rice
16. Norin 10 is dwarfing gene of
(1) Wheat (2) Barley
(3) Oat (4) Maize

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DPP No. : 22
CHAPTER - ECOLOGY

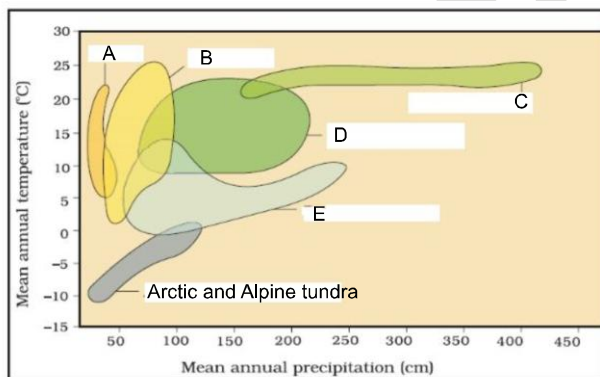
Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION A : Introduction, Organism and its Environment, , Major Abiotic Factors

- The study of inter-relationship between living organisms and their environment is called
(1) Ecosystem (2) Phytogeography (3) Ecology (4) Phytosociology
- Who defined ecology as the reciprocal relationship between organisms and their environments
(1) Mishra (2) Haeckel (3) Odum (4) Lemarck
- Term 'ecology' was proposed by
(1) William (2) Odium (3) Reter (4) Daubenmier
- Different seasons prevail in different time in a year due to
(1) Occurrence Annual variations in the intensity and duration of temperature.
(2) Rotation of earth around sun
(3) Tilting of earth on its axis
(4) All of the above

5.



Select the correct labelling of above diagram

- (1) A– Desert , B– Grassland, C– Tropical rain forest, D- Temperate forest, E–Coniferous Forest
(2) A– Grassland, B– Desert, C– Tropical rain forest, D- Coniferous Forest, E– Temperate forest
(3) A– Coniferous Forest, B– Grassland, C– Tropical rain forest, D- Temperate forest, E– Desert
(4) A– Tropical rain forest, B– Grassland, C– Desert, D- Coniferous Forest, E– Temperate forest
- Species are considered as
(1) Real units of classification devised by taxonomists
(2) Real basic units of classification
(3) The largest units of classification
(4) Artificial concept of human mind which cannot be defined in absolute terms
- If all the green plants were to disappear from the earth
(1) All the animals will die (2) Only herbivorous will die
(3) Only carnivorous will die (4) It will not matter to any animal
- Which of the following pairs are correctly matched?
A. Poikilosmotic – Animals show osmotic dependence with respect to the environment.
B. Homoiomsmotic – Animals maintain body fluid concentrations constant irrespective of fluctuations in the environmental concentration.
C. Euryhaline – Animals withstand aquatic media of wide range of concentrations.
D. Stenohaline – Animals survive with a wide range of salinities.
(1) B, C, D (2) A, B, D (3) A, C, D (4) A, B, C
- Animals of colder areas have short ear, foot etc. It is a rule of
(1) Gloger's rule (2) Bergman's rule (3) Jorden's rule (4) Allen's rule

10. Column-I represent the size of the soil particles and column-II represents type of solid components .Which of the following is correct match for the column-I and column-II.

Column I		Column II	
A	0.2 to 2.00 mm	i	Silt
B	Less then 0.002 mm	ii	Clay
C	0.02 to 0.2 mm	iii	Coarse sand particle
D	0.002 to 0.02 mm	iv	Fine sand particle

(1) A → ii, B → iii, C → iv, D → i

(3) A → iii, B → ii, C → iv, D → i

(2) A → iv, B → i, C → iii, D → ii

(4) None of the above

DPP No. : 23
CHAPTER - ECOLOGY

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION B : Responses to Abiotic Factors, Adaptations, Population ,Population Interactions

- Natality is the characteristic of a population which means
 - The total number of individuals present per unit area at a given time
 - The increase in number of individuals in a population under given environmental conditions
 - Loss of individuals due to death in a population under given environmental conditions
 - Each population has three different age groups
- The stage of suspended development under unfavourable condition is called
 - Thermoregulation
 - Hibernation
 - Aestivation
 - Diapause
- What do you mean by partial regulators?
 - They are able to maintain a constant body temperature and constant osmotic concentration despite changes in the external environment.
 - They are unable to maintain constant body temperature and osmotic concentration according to ambient condition of environment.
 - They have ability to regulate body functions to a limited extent during change in environment
 - None of the above
- The formula for exponential population growth is
 - $rN / dN = dt$
 - $dN / dt = rN$
 - $dt / dN = rN$
 - $dN / dN = dt$
- Why small animals like shrews and humming birds are not found in Polar Regions
 - They have large surface area relative to their volume.
 - They tend to lose body heat very fast when it is cold outside
 - Thermoregulation is energetically expensive for such small animals
 - All of the above
- Some aquatic organisms can tolerate excessive cold of water due to presence of
 - Chaperons
 - Proline
 - Sorbitol
 - Anti freeze proteins & glycerol
- The capacity of an environment to pull on a limited number of individuals is known as
 - Bearing capacity
 - Limited capacity
 - Environmental resistance
 - Carrying capacity
- In decline population of human the shape of pyramid is
 - Urn shaped
 - Bell shaped
 - Triangular shaped
 - None of the above
- The growth speed of a population can often be described with the logistic growth equation $dN / dt = rN(K-N)/K$
In this equation, N is the number of individuals, r is the intrinsic relative rate and K is the carrying capacity. According to this equation, the equilibrium number of individuals in the population is determined by
 - r only
 - K only
 - r and K
 - N and K
- $N_{t+1} = N_t + (B + I) - (D + E)$
In the above equation, if the value of D + E and B + I become equal then the population will -
 - Declining
 - stable
 - Expanding
 - Non evaluted

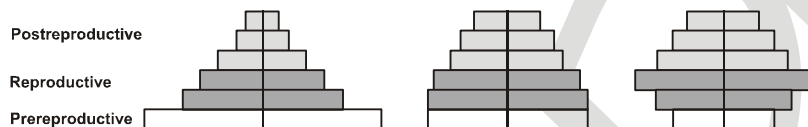
DPP No. : 24
CHAPTER - ECOLOGY

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION C : Population ,Population Interactions, Life history variations

1. In decline population of human the shape of pyramid is
(1) Urn shaped (2) Bell shaped
(3) Triangular shaped (4) None of the above



2. In the above pyramids, which type of pyramid will show the positive growth
(1) Triangular shaped (2) Bell shaped (3) Urn shaped (4) None
3. Which of the following one can be placed in more than one trophic levels.
(1) Frog (2) Sparrow (3) Wolf (4) Hawk
4. Cattles or goats or the browsing animals do not eat the weed Calotropis due to presence of
(1) Transcinamic acid (2) Proline & sorbitol
(3) Cardiac glycosides (4) Chaperonins
5. Brood parasitism can be observed between
(1) Mycorrhizae & roots of higher plants (2) Cuscuta and hedge plants
(3) Ophrys orchid and colpa orea (4) Cuckoo and crow
6. Which of the following concept is correct about amensalism?
(1) Both species are benefitted
(2) One species is benefitted and the other is neither benefitted nor harmed
(3) One species is harmed whereas the other is unaffected
(4) One species is benefitted and the other is harmed
7. Which of the following pair is incorrect –
(1) Secondary producer – Herbivores
(2) Mutualism – Relationship of Fig & Wasp
(3) Resource partitioning – Relationship of Balanus barnacle & chathamalus barnacle
(4) Camouflage – Praying mentis
8. **Column-I** **Column-II**
(i) + – (A) Amensalism
(ii) + 0 (B) Parasitism
(iii) + + (C) Commensalism
(iv) – 0 (D) Mutualism
(1) i–B, ii–A, iii–D, iv–C (2) i–A, ii–B, iii–D, iv–C
(3) i–B, ii–A, iii–C, iv–D (4) i–B, ii–C, iii–D, iv–A
9. Which of the following produce offsprings only one time in its life:
(1) Birds (2) Mammals
(3) Salmon fish (4) Cray fish
10. Principle of competitive exclusion proposed by :
(1) Gause (2) Tilman
(3) Carl mobius (4) Haeckel

DPP No. : 25
CHAPTER - ECOLOGY

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION D : Introduction, Components of Ecosystem, Structure and functions of ecosystem

1. Word 'ecosystem' was coined by
(1) Elton (2) Tansley (3) Odum (4) Billing
2. The rate of storage at consumer level is
(1) Secondary productivity (2) Tertiary productivity
(3) Both of these (4) Net productivity
3. How many % value of PAR of incident solar radiation that is source of nutrition of all living being?
(1) 1 – 5% (2) 2 – 10% (3) 25% (4) 50%
4. A group of interconnected food chains is called
(1) Pyramid of energy (2) Food web (3) Food cycle (4) Complex food chain
5. The decomposers in an ecosystem constitute the following trophic level
(1) T₁ (2) T₃ (3) T₅ (4) T₄
6. Total amount of living substances present in different levels of a chain is showed as
(1) Pyramid of biomass (2) Pyramid of energy
(3) Pyramid of number (4) All of the above
7. If the decomposers become extinct, the most severely affected would be
(1) Non-cycling of minerals (2) Damage to nitrogen fixation
(3) Biomagnification (4) Carnivores will be starved
8. Which one of the following types of organisms occupy more than one trophic level in a pond ecosystem?
(1) Frog (2) Phytoplankton (3) Fish (4) Zooplankton
9. Who proposed the concept of ecological pyramid?
(1) Lindmen (2) Haeckel (3) Odum (4) Charls elton
10. In an ecosystem nepenthes is considered as
(1) Producer (2) Primary consumer
(3) Secondary Consumer (4) (1) & (3) both

DPP No. : 26
CHAPTER - ECOLOGY

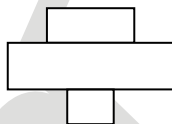
Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION E : Functions of ecosystem, Ecological succession, Carbon cycle, Phosphorus Cycle, Ecosystem Services

1. Which of following animal can be considered as primary consumer and secondary consumer?
(1) Snake (2) Zooplankton (3) Sparrow (4) Frog

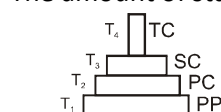
2.



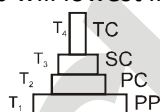
The above spindle shaped pyramid is of

- (1) Pond ecosystem (2) Marine ecosystem
(3) Tree ecosystem (4) Grass land ecosystem

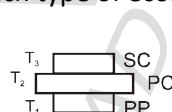
3. The amount of standing crop will lowest in T_1 of which type of ecological pyramid in the given options.



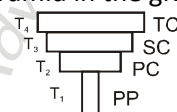
- (1) Grassland



- (2) Pond ecosystem



- (3) Tree ecosystem



- (4) Forest ecosystem

4. Lichens are pioneer in succession

- (1) Hydrosere (2) Lithosere (3) Psammosere (4) Xerosere

5. Stages of hydrarch are (a) Marsh meadow stage (b) Reed swamp stage (c) Submerged plant stage (d) phytoplankton tage (e) Submerged free floating stage, Identify the correct sequence.

- (1) d, c, e, b & a (2) c, e, a, b & d (3) b, d, c, a & e (4) d, e, c, b & a

6. In hydrarch succession the sequence of Hydrosere is

- (1) Phytoplanktons – Submerged plant stage – Submerged free floating plant stage-Reed swamp stage – Marsh maedow stage, scrub stage, forest.
(2) Phytoplanktons, submerged plant stage freefloating plant stage, Reed swamp stage, scrub stage, forest
(3) Zooplanktons, submerged plant stage, Reedswamp stage, Marsh maedow stage, forest
(4) None of the above

7. It has been estimated that about _____ CO_2 is annually fixed by producers during photosynthesis

- (1) 4×10^{13} (2) 7.4×10^{13}
(3) 2×10^{13} (4) 8.2×10^{13}

8. Natural storage of phosphrus is found in

- (1) Biomembranes (2) Rocks
(3) Nucleic acid (4) Shell, bons and teeth of animals

9. _____ have very recently tried to put price tags on nature's life-support services

- (1) Robert Constanza and his colleagues (2) Paul Eherlich
(3) Wilson (4) Odum

10. Which of the following type of pyramid are always upright

- (1) Pyramid of biomas (2) Pyramid of energy
(3) Pyramid of number (4) Both 1 & 3

DPP No. : 27
CHAPTER - ECOLOGY

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION F : Types of pollutants, Air pollution, Acid rain, Ozone depletion, Water pollution

- Which of the following is a secondary pollutant?
(1) SO_2 (2) CO (3) O_3 (4) NO_2
- Which is secondary pollutant?
(1) CO (2) SO_2 (3) Hydrocarbon (4) O_3
- PAN is secondary pollutant and this is formed by the
(1) Synergism of NO and O_3 (2) Synergism of HC and O_3
(3) Synergism of NO and HC (4) Synergism of NO and SO_2
- In atmosphere, Acid rain is caused due to increase concentration of
(1) SO_2 and NO_2 (2) CO and CO_2 (3) CO and SO_3 (4) O_3 and dust
- Photochemical transformation of the automobile exhaust emission in UV wavelength of sunlight results into
(1) CO and CO_2 (2) SO_2 and NO_2 (3) O_3 and PAN (4) CH_4 and C_6H_6
- Ozone hole is due to mainly two green house gases which are
(1) CO_2 , CH_4 (2) N_2O and CFCs (3) N_2O and CH_4 (4) CFC and CH_4
- Which of following is incorrect pair?
(1) Terror of Bengal - Water hyacinth (2) Algal bloom - Eutrophication
(3) Floccs - Tertiary treatment (4) FOAM - Friends of archata marsh
- The pollutant common in plants and most hazardous pollutants of automobile exhaust is
(1) Cd (2) Pb (3) Hg (4) Cr
- BOD test or biochemical oxygen demand test is made for measuring.
(1) Air pollution (2) Water pollution (3) Noise pollution (4) soil pollution
- Eutrophication is often seen in
(1) Deserts (2) Fresh water lakes (3) Ocean (4) Mountains

DPP No. : 28
CHAPTER - ECOLOGY

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION G : Water pollution, Bio-magnification, Soil Pollution, Noise pollution, Green house effect

1. Secondary sewage treatment effectively reduces.

- (1) Turbidity of water (2) BOD of water
(3) Salinity of water (4) Toxicity of metals

2. Select the incorrect pair.

- (1) Polyblend – Recycled modified plastic
(2) Snow blindness – Ozone depletion
(3) Diapause – A stage suspended development
(4) Pyramid of biomass in pond ecosystem – upright

3. Match the columns.

	Column I		Column II
a.	Arsenic	1.	Minimata
b.	Strontium-90	2.	Itai-itai
c.	Mercury	3.	Leukemia
d.	Cadmium	4.	Skeletal Fluorosis
e.	Fluoride	5.	Black foot disease

- (1) a → 5, b → 3, c → 1, d → 2, e → 4 (2) a → 2, b → 3, c → 5, d → 1, e → 4
(3) a → 3, b → 4, c → 5, d → 1, e → 2 (4) a → 5, b → 4, c → 3, d → 2, e → 1

4. Without greenhouse effect the average temperature of earth's atmosphere would have been..... (a).... In the last century, the temperature of earth has increased by....(b).... It causes deleterious changes in environment like(c).... Identify the (a), (b) & (c)

- (1) 15°C, 1.5°C, Ozone depletion (2) -18°C, 0.6°C, El Niño effect
(3) -20°C, 0.8°C, Global warming (4) -18°C, 0.7°C, Acid rain

5. Eutrophication is caused by

- (1) Mine effluents (2) Sewage and detergents
(3) Petrochemical and fertilizer plant effluents (4) NO₃⁻ and SO₄²⁻ present in acid rains

6. Cleaning Environment with biological options such as microbes & plants is called

- (1) Bioremediation (2) biotechnology (3) biowarfare (4) Incineration

7. Photochemical smog pollution does not contain

- (1) Carbon dioxide (2) PAN (peroxy acyl nitrate)
(3) Ozone (4) Nitrogen dioxide

8. In a polluted lake, the index of pollution is

- (1) BOD and Daphnia (2) DO and Artemisia (3) Presence of frogs (4) Diatoms larvae

9. Gases referred to as "green house gases" are

- (1) CO₂, O₂, NO₂, NH₃ (2) Chlorofluoro carbon, CO₂, NH₃, N₂
(3) CH₄, N₂, CO₂, NH₃ (4) Chlorofluoro carbon, CO₂, CH₄, N₂O

10. CFC are not recommended to be used in refrigerators because they

- (1) Increase temperature (2) Deplete ozone
(3) Affect environment (4) Affect human body

DPP No. : 29
CHAPTER - ECOLOGY

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION H : MISCELLANEOUS

- Cadmium pollution may cause
(1) minimata disease (2) Skeletal fluorosis (3) Black foot disease (4) Itai-itai disease
- Match the following and choose the correct combinations from the options given.

	Column I		Column II
1	DDT	p	CO, CO ₂
2	PAN	q	Smog
3	Acid rain	r	Biological magnification
4	Global warming	s	SO ₂

(1) 1 → s, 2 → r, 3 → q, 4 → p (2) 1 → p, 2 → r, 3 → q, 4 → s
(3) 1 → q, 2 → r, 3 → s, 4 → p (4) 1 → r, 2 → q, 3 → s, 4 → p
- The term "Bio-magnification" refers to the
(1) Growth of organism due to food consumption
(2) Increase in population size
(3) Blowing in up of environmental issues by man
(4) Increase in the concentration of non-degradable pollutants as they pass through food chain
- Kyoto protocol has, specified the commitments of different countries
(1) To mitigate climate changes (2) Limit production of chlorofluorocarbons
(3) To prepare a world climatic programme (4) None of the above
- Environmental summit of UN in 2012 held in
(1) Durbon – South Africa (2) Doha - Katar
(3) Copenhagen – Denmark(4) Peris – France
- Green muffler is used against which type of pollution.
(1) Air (2) Water (3) Soil (4) Noise
- Which of the following is major greenhouse gas for global warming?
(1) CH₄ (2) CO₂ (3) CFC (4) N₂O
- Stone leprosy is related with
(1) Greenhouse effect (2) *Mycobacterium laprae*
(3) Ultraviolet radiations (4) Acid rain
- JFM started in :
(1) 1980 (2) 1990 (3) 1992 (4) 1995
- UN summit on global warming in 2015 held in :
(1) Durbon (2) Doha (3) Paris (4) Leema

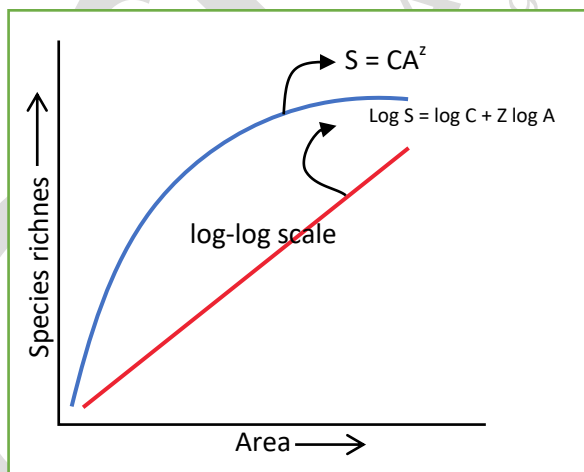
DPP No. : 30
CHAPTER - ECOLOGY

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION I : Magnitude of Biodiversity, Levels of biodiversity, Patterns of Biodiversity, Loss of Biodiversity, Causes of Biodiversity Losses, Conservation of Biodiversity

- Alpha diversity is biodiversity present
 - (1) Within community
 - (2) between community
 - (3) Ranges of communities
 - (4) All the above
- Rate of replacement of species along a gradient of habitats / Communities is called
 - (1) α -diversity
 - (2) β -diversity
 - (3) γ -diversity
 - (4) ω -diversity
- The different species of a medicinal plant are found in different parts of himalayan region which bear different concentration of a chemicala..... due tob..... This plant isc.....
 - (1) a $\rightarrow$ morphine b $\rightarrow$ species richness c $\rightarrow$ Papaver somniferum
 - (2) a $\rightarrow$ Quinine b $\rightarrow$ β -diversity c $\rightarrow$ Cinchona officinalis
 - (3) a $\rightarrow$ Raserpine b $\rightarrow$ genetic diversity c $\rightarrow$ Rauwolfia vomitaria
 - (4) a $\rightarrow$ Stramonium b $\rightarrow$ γ -diversity c $\rightarrow$ Atropa beladona
- Which of the following is correct



- (1) S = exponential growth, C = Y intercept, Z = Unknown factor, A = area
 - (2) S = species richness, C = Y intercept, Z = regression coefficient, A = area
 - (3) S = Logistic growth, C = carrying capacity Z = Environmental resistance, A = area
 - (4) S = Semi arid species, C = Y intercept. Z = regression coefficient, A = area
- Red data book is maintained by
 - (1) MAB
 - (2) The Bombay Natural History Society
 - (3) CCMB
 - (4) IUCN
- Introduction of Clarius gariepinus in aquaculture in india is a serious threat to extinction of
 - (1) Cray fish
 - (2) Cichlid fish
 - (3) Native cat fish
 - (4) Salmon fish
- A weed which has invaded many forest lands of India is
 - (1) Parthenium hysterophours
 - (2) Chenopodium alba
 - (3) Lantana camara
 - (4) Eichhornia crassipes
- Introduction of Nile Perch in Lake Victoria of South Africa resulted in:
 - (1) excessive growth of water weeds
 - (2) elimination of water weeds
 - (3) elimination of many species of Cichlid fish
 - (4) excessive growth of chichlid fish
- Species very near to extinction if conservation measures are not promptly taken is
 - (1) Threatened species
 - (2) Rare species
 - (3) Endangered species
 - (4) Vulnerable species

10. Lungs of planet is another name of
- | | |
|----------------------|---------------------------------|
| (1) Silent valley | (2) Australian coral reef |
| (3) Himalayan region | (4) Amazon Tropical rain forest |

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DPP No. : 31
CHAPTER - ECOLOGY

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION J : Conservation of Biodiversity

- Silent Valley having rare plants and animals is located in
 - (1) Kerala
 - (2) Karnataka
 - (3) Jammu and Kashmir
 - (4) Andhra Pradesh
- Which one of the following is a refuge for Asiatic lion (*Panthera leo persica*)
 - (1) Kanha national Park (M.P.)
 - (2) Corbett national Park (U.P.)
 - (3) Kaziranga National Park (Assam)
 - (4) Gir Forest (Gujarat)
- Identify the correct pair of an animal and its habitat region
 - (1) Elephant – Ranthambore
 - (2) Flamingo – Rann of Kutch
 - (3) Wild ass – Dachigam
 - (4) Great Indian Bustard – Assam
- One of the most important functions of botanical gardens is that:
 - (1) They provide a beautiful area for recreation
 - (2) one can observe tropical plants there
 - (3) They allow ex situ conservation of germplasm
 - (4) They provide the natural habitat for wildlife
- Number of ecological hotspots in India are:
 - (1) 1
 - (2) 2
 - (3) 3
 - (4) 4
- Which one is a critically endangered animal species?
 - (1) *Antelope cervicapra*
 - (2) *Sus salvanius*
 - (3) *Ailurus fulgens*
 - (4) *Calotes versicolor*
- Kaziranga wildlife sanctuary is famous for
 - (1) Tiger
 - (2) Musk deer
 - (3) Elephant
 - (4) Rhino
- Which is the first national park established in India
 - (1) Bandipur national park
 - (2) Corbett national park
 - (3) Kanha national park
 - (4) Periyar national park
- Which of the following animals has become almost extinct in India
 - (1) Wolf
 - (2) Rhinoceros
 - (3) Hippopotamus
 - (4) Cheetah
- Assertion** : Alpha diversity is said to be higher if the dissimilarity between communities is higher
Reason : Alpha diversity is a measure of diversity between the communities
 - (1) If both assertion and reason are true and reason is the correct explanation of assertion
 - (2) If both assertion and reason are true but reason is not the correct explanation of assertion
 - (3) If assertion is true but reason is false
 - (4) If both assertion and reason are false

DPP No. : 32 (DPP FOR AIIMS ONLY)

CHAPTER - ECOLOGY

Total Marks : 40
Single choice Objective

Max. Time : 10 min.
(4 marks 1 min.)

SECTION K : MISCELLANEOUS

1. **Assertion** : Excessive growth of **planktonic** (free-floating) algae in a pond forms **algal bloom**.
Reason : Algal blooms cause deterioration of the water quality and fish mortality.
(1) (2) (3) (4)
2. **Assertion** : Biomagnification refers to increase in concentration of the toxicant at successive trophic levels.
Reason : High concentrations of DDT disturb calcium metabolism in birds, which causes thinning of eggshell and their premature breaking, eventually causing decline in bird populations.
(1) (2) (3) (4)
3. **Assertion** : Cultural or Accelerated Eutrophication can radically accelerate the aging process of water body.
Reason : Human interference like releasing domestic wastes and industrial wastes are responsible for it.
(1) (2) (3) (4)
4. **Assertion** : Considerable heating of Earth leading to global warming.
Reason : This rise in temperature is leading to deleterious changes in the environment and resulting in odd climatic changes (e.g. El Nino effect).
(1) (2) (3) (4)
5. **Assertion** : Good and bad ozone, both are observed in atmosphere.
Reason : Ozone gas is continuously formed by the action of UV rays on molecular oxygen, and also degraded into molecular oxygen in the stratosphere.
(1) (2) (3) (4)
6. **Assertion** : Inflammation of cornea, called **snow-blindness** cataract, etc. may occur in human in ozone depleting areas.
Reason : CFCs cause deleterious effects of ozone depletion.
(1) (2) (3) (4)
7. **Assertion** : Net primary productivity is the available biomass for the consumption to heterotrophs.
Reason : Herbivores and decomposers can't survive without NPP.
(1) (2) (3) (4)
8. **Assertion** : Ecosystems need a constant supply of energy to synthesize the molecules they require, to counteract the universal tendency toward increasing disorderliness.
Reason : Ecosystems are not exempt from the Second Law of thermodynamics.
(1) (2) (3) (4)
9. **Assertion** : The entire sequence of communities that successively change in a given area are called seral communities.
Reason : Succession causes decrease in the number of species and organisms as well as an decrease in the total biomass.
(1) (2) (3) (4)
10. **Assertion** : Pyramid of biomass are usually inverted in aquatic habitats
Reason : GFC are dominant in these habitats.
(1) (2) (3) (4)

ANSWER KEY

BOTANY

DPP No. : 01

1. (B) 2. (D) 3. (D) 4. (D) 5. (B) 6. (D) 7. (B)
8. (D) 9. (D) 10. (C)

DPP No. : 02

1. (C) 2. (D) 3. (D) 4. (D) 5. (B) 6. (B) 7. (D)
8. (D) 9. (B) 10. (B)

DPP No. : 03

1. (C) 2. (B) 3. (C) 4. (D) 5. (C) 6. (B) 7. (D)
8. (D) 9. (B) 10. (C)

DPP No. : 04

1. (A) 2. (C) 3. (C) 4. (A) 5. (C) 6. (B) 7. (B)
8. (B) 9. (B) 10. (C)

DPP No. : 05

1. (A) 2. (A) 3. (B) 4. (C) 5. (A) 6. (C) 7. (B)
8. (C) 9. (D) 10. (D)

DPP No. : 06

1. (B) 2. (D) 3. (C) 4. (C) 5. (B) 6. (A) 7. (A)
8. (B) 9. (B) 10. (B)

DPP No. : 07

1. (D) 2. (A) 3. (C) 4. (B) 5. (D) 6. (A) 7. (C)
8. (B) 9. (D) 10. (B)

DPP No. : 08

1. (D) 2. (D) 3. (D) 4. (B) 5. (B) 6. (A) 7. (B)
8. (D) 9. (A) 10. (A)

DPP No. : 09

1. (D) 2. (B) 3. (B) 4. (C) 5. (C) 6. (A) 7. (D)
8. (A) 9. (B) 10. (B)

DPP No. : 10

1. (B) 2. (B) 3. (D) 4. (D) 5. (D) 6. (A) 7. (D)
8. (D) 9. (2) 10. (A)

DPP No. : 11

1. (B) 2. (B) 3. (B) 4. (B) 5. (A) 6. (A) 7. (D)
8. (C) 9. (C) 10. (D)

DPP No. : 12

1. (C) 2. (C) 3. (B) 4. (C) 5. (C) 6. (B) 7. (D)
8. (D) 9. (B) 10. (B)

DPP No. : 13

1. (C) 2. (D) 3. (D) 4. (A) 5. (B) 6. (B) 7. (A)
8. (C) 9. (C) 10. (C)

DPP No. : 14

1. (B) 2. (C) 3. (D) 4. (A) 5. (C) 6. (B) 7. (D)
8. (D) 9. (D) 10. (A)

DPP No. : 15

1. (B) 2. (C) 3. (B) 4. (D) 5. (D) 6. (A) 7. (B)
8. (C) 9. (C) 10. (B)

DPP No. : 16

1. (C) 2. (A) 3. (B) 4. (B) 5. (C) 6. (B) 7. (A)
8. (C) 9. (B) 10. (C)

DPP No. : 17

1. (A) 2. (B) 3. (A) 4. (D) 5. (C) 6. (A) 7. (C)
8. (D) 9. (A) 10. (B)

DPP No. : 18

1. (C) 2. (C) 3. (D) 4. (B) 5. (B) 6. (D) 7. (D)
8. (C) 9. (B) 10. (B)

DPP No. : 19

1. (D) 2. (A) 3. (B) 4. (D) 5. (C) 6. (B) 7. (C)
8. (A) 9. (B) 10. (B)

DPP No. : 20

1. (D) 2. (A) 3. (A) 4. (C) 5. (C) 6. (B) 7. (B)
8. (D) 9. (D) 10. (C)

DPP No. : 21

1. (A) 2. (D) 3. (D) 4. (C) 5. (B) 6. (A) 7. (A)
8. (D) 9. (B) 10. (C) 11. (A) 12. (D) 13. (C) 14. (C)
15. (D) 16. (A)

DPP No. : 22

1. (C) 2. (B) 3. (C) 4. (D) 5. (A) 6. (B) 7. (A)
8. (D) 9. (D) 10. (C)

DPP No. : 23

1. (B) 2. (D) 3. (C) 4. (B) 5. (D) 6. (D) 7. (D)
8. (A) 9. (B) 10. (B)

DPP No. : 24

1. (A) 2. (A) 3. (B) 4. (C) 5. (D) 6. (C) 7. (C)
8. (D) 9. (C) 10. (A)

DPP No. : 25

1. (B) 2. (A) 3. (B) 4. (B) 5. (C) 6. (A) 7. (A)
8. (C) 9. (D) 10. (D)

DPP No. : 26

1. (3) 2. (C) 3. (B) 4. (B) 5. (A) 6. (A) 7. (A)
8. (B) 9. (A) 10. (B)

DPP No. : 27

1. (C) 2. (D) 3. (C) 4. (A) 5. (C) 6. (B) 7. (C)
8. (B) 9. (B) 10. (B)

DPP No. : 28

1. (B) 2. (D) 3. (A) 4. (B) 5. (B) 6. (A) 7. (A)
8. (A) 9. (D) 10. (B)

DPP No. : 29

1. (4) 2. (D) 3. (D) 4. (B) 5. (B) 6. (D) 7. (B)
8. (D) 9. (A) 10. (C)

DPP No. : 30

1. (A) 2. (B) 3. (C) 4. (B) 5. (D) 6. (C) 7. (C)
8. (C) 9. (C) 10. (D)

DPP No. : 31

1. (A) 2. (D) 3. (B) 4. (C) 5. (C) 6. (B) 7. (D)
8. (B) 9. (D) 10. (D)

DPP No. : 32

1. (B) 2. (A) 3. (A) 4. (B) 5. (B) 6. (C) 7. (A)
8. (B) 9. (D) 10. (B)