BIO BOTANY HIGHER SECONDARY (AS PER REDUCED SYLLABUS 2021-22) BOOK BACK ONE MARKS WITHOUT ANSWER

Lesson -1

Asexual and Sexual Reproduction in plants

- 1. Choose the correct statement from the following
 - a) Gametes are involved in asexual reproduction
 - b) Bacteria reproduce asexually by budding
 - c) Conidia formation is a method of sexual reproduction
 - d) Yeast reproduces by budding
- 2. An eminent Indian embryologist is
 - a) S.R.Kashyap
- b) P.Maheswari
- c) M.S. Swaminathan
- d) K.C.Mehta

- 3. Identify the correctly matched pair
 - a) Tuber Allium cepa

b) Sucker - Pistia

c) Rhizome – Musa

d) Stolon - Zingiber

- 4. Pollen tube was discovered by
 - a) J.G.Kolreuter
- b) G.B.Amici
- c) E.Strasburger
- d) E.Hanning

- 5. Size of pollen grain in Myosotis
 - a) 10 micrometer

b) 20 micrometer

c) 200 micrometer

- d) 2000 micrometer
- 6. First cell of male gametophyte in angiosperm is
 - a) Microspore
- b) megaspore
- c) Nucleus
- d) Primary Endosperm nucleus

7. Match the following

I)	External fertilization	i)	pollen grain
II)	Androecium	ii)	anther wall
III)	Male gametophyte	iii)	algae
IV)	Primary parietal layer	iv)	stamens

(a)	1V	1	11	111
(b)	iii	iv	i	ii
(c)	iii	iv	ii	i
(d)	Iii	i	iv	ii

8.	Arrange the layers of anther wall from locus	s to periphery					
	a) Epidermis, middle layers, tapetum, endothecium						
	b) Tapetum, middle layers, epidermis, endot	thecium					
	c) Endothecium, epidermis, middle layers, t	apetum					
	d) Tapetum, middle layers, endothecium, ep	pidermis.					
9.	Identify the incorrect pair						
	a) sporopollenin - exine of pollen grain						
	b) tapetum – nutritive tissue for developing	microspores	V				
	c) Nucellus – nutritive tissue for developing	g embryo					
	d) obturator – directs the pollen tube into m	icropyle					
10.	Assertion: Sporopollenin preserves pollen i	in fossil deposits					
	Reason: Sporopollenin is resistant to physic	cal and biological decomposition	on				
	a) Assertion is true; reason is false	b) Assertion is false; 1	reason is true				
	c) Both Assertion and reason are not true	d) Both Assertion and	l reason are true.				
11.	Choose the correct statement (s) about tenuit	inucellate ovule					
	a) Sporogenous cell is hypodermal	b) Ovules have fairly large nu	ucellus				
	c) Sporogenous cell is epidermal	d) ovules have single layer of	f nucellus tissue				
12.	Which of the following represent mega gam	netophyte					
	a) Ovule b) Embryo sac	c) Nucellus	d) Endosperm				
13.	In Haplopappus gracilis, number of chromo	somes in cells of nucellus is 4.	What will be				
	the chromosome number in Primary endosp	erm cell?					
	a) 8 b) 12	c) 6	d) 2				
14.	Transmitting tissue is found in						
	a) Micropylar region of ovule	b) Pollen tube	wall				
	c) Stylar region of gynoecium	d) Integument					
15.	The scar left by funiculus in the seed is						
	a) tegmen b) radicle	c) epicotyls	d) hilum				
16.	A Plant called X possesses small flower wit	th reduced perianth and versatil	le anther. The				
	probable agent for pollination would be						
	a) water b) air	c) butterflies	d) beetles				
17.	Consider the following statement (s)						
	i) In Protandrous flowers pistil matures earl	ier					
	ii) In Protogynous flowers pistil matures ear	·lier					
	iii) Herkogamy is noticed in unisexual flower	ers					
	iv) Distyly is present in Primula						
	a) i and ii are correct	b) ii and iv are					
	c) ii and iii are correct	d) i and iv are	correct				

18.	Coelorhiza is found			. –		
19.	a) PaddyParthenocarpic fruit	b) Bean s lack	c) Pea	d) Tridax		
	a) Endocarp	b) Epicarp	c) Mesocarp	d) seed		
20.	Majority of plants p					
	a) 1 celled stage	b) 2 celled stage	c) 3 celled stage	d) 4 celled stage		
		Lesso	n - 2			
		Classical	Genetics	X		
1.	Extra nuclear inheri	tance is a consequence	e of presence of genes in	n (7)		
	a) Mitrochondria and	d chloroplasts	b) Endoplasmic retic	culum and mitrochondria		
	c) Ribosomes and cl	hloroplast	d) Lysososmes and a	ribosomes		
2.		• • • •	gametes produced by a plant with the genotype b) AaBB			
3.	,		l be produced by a plan	,		
	a) Three	b) Four	c) Nine	d) Two		
4.	Which one of the fo	llowing is an example	e of polygenic inheritance	ce?		
	a) Flower colour in 1	Mirabilis Jalapa	b) Production	n of male honey bee		
	c) Pod shape in gard	len pea	d) Skin Colo	ur in humans		
5.	In Mendel's experiments with garden pea, round seed shape (RR) was dominant over wrinkled seeds (rr), yellow cotyledon (YY) was dominant over green cotyledon (yy). What are the expected phenotypes in the F2 generation of the cross RRYY x rryy? a) Only round seeds with green cotyledons					
	b) Only wrinkled see	eds with yellow cotyle	edons			
		eds with green cotyled yellow cotyledons ar	lons I wrinkled seeds with ye	ellow cotyledons		
6.	Test cross involves		·	•		
	a) Crossing between two genotypes with recessive traitb) Crossing between two F1 hybrids					
	,	ybrid with a double re				
7.	, -	two genotypes with o		gous yellow seed pant is		
/.				een seeded plants would		
	you expect in F1 ge	=	or your wild giv	The second plants would		
	a) 9:1	b) 1:3	b) 3:1	d) 50:50		

8.	The genotype of a plant showing the domina	nt phenotype can be o	determined by
	a) Back cross b) Test cross	c) Dihybrid corss	d) Pedigree analysis
9.	Select the correct statement from the ones	given below with res	spect to dihydrid
	cross		
	a) Tightly linked genes on the same chromos	somes show very few	combinations
	b) Tightly linked genes on the same chromos	somes show higher co	mbinations
	c) Genes far apart on the same chromosomes	show very few recon	nbinations
	d) Genes loosely linked on the same chromo	somes show similar r	ecombinations as the
	tightly linked ones	111117	
10.	Which Mendelian idea is depicted by a cross	s in which the FI gene	eration resembles both
	the parents	1 \ 7	
	a) Incomplete dominance		w of dominance
	c) Inheritance of one gene	d) Co	-dominance
11.	Fruit colour in squash is an example of	*	
	a) Recessive epistatsis		minant epistasis
	c) Complementary genes		ibitory genes
12.	In his classic experiments on Pea plants, Mer	ndel did not use	
	a) Flowering position	b) Seed color	
	c) Pod length	d) Seed shape	
13.	The epistatic effect, in which the dihybrid cre	oss 9:3:3:1 between A	AaBb Aabb is modified as
	a) Dominance of one allele on another allele	of both loci	
	b) Interaction between two alleles of differen	nt loci	
	c) Dominance of one allele to another alleles	of same loci	
	d) Interaction between two alleles of some lo	oci	
14.	In a test cross involving F1 dihybrid flies, me	ore parental type offs	pring were produced
	than the recombination type offspring. This is	indicates	
	a) The two genes are located on two different	t chromosomes	
	b) Chromosomes failed to separate during me	eiosis	
	c) The two genes are linked and present on se	ome chromosome	
	d) Both of the characters are controlled by m	ore than one gene	
15.	The genes controlling the seven pea characte	ers studied by Mendel	are known to be
	located on how many different chromosomes	s?	
	a) Seven b) Six	c) Five	d) Four
16.	Which of the following explains how progen	y can posses the com	binations of traits that
	none of the parent possessed?		
	a) Law of segregation	b) Chromoso	•
	b)Law of independent assortment	d) Polygenic	inheritance

17.	"Gametes are never l	iybrid". This is a state	ement of		
	a) Law of dominance		b) Law of independent assortment		
	c) Law of segregation	1	d) Law of randon	n fertilization	
18.	Gene which suppress	es other genes activity	y but does not lie on the sar	ne locus is called as	
	a) Epistatic	b) Supplement only	c) Hypostatic	d) Codominan	
19.	Pure tall plants are c	rossed with pure dwa	orf plants. In the F1 generat	ion, all plants were	
	tall. These tall plants	s of F1 generation we	ere selfed and the ratio of	tall to dwarf plants	
	obtained was 3:1. Th	is is called			
	a) Dominance		b) Inherita	ance	
	c) Codominance		d) Heredit	ty	
20.	The dominant epistat	is ratio is			
	a) 9:3:3:1	b) 12:3:1	c) 9:3:4	d) 9:6:1	
21.	Select the period for	Mendel"s hybridization	n experiments		
	a) 1856 - 1863		b) 1850 -	1870	
	c) 1857 - 1869		d) 1870 -	1877	
22.	Among the following experimentation peas	•	one was not considered	by Mendel in his	
	a) Stem – Tall or dwa	urf	b) Trichomal glandular o	r non-glandular	
	b) Seed – Green or ye	ellow	d) Pod – Inflated or cons	tricted.	
		Less	on - 3		
	C	hromosomal Ba	asis of Inheritance		

- 1. An allohexaploidy contains
 - a) Six different genomes

- b) Six copies of three different genomes
- c) Two copies of three different genomes
- d) Six copies of one genome

2. Match list I with list II

	List I		List II
A.	A pair of chromosomes extra with diploid	i)	Monosomy
B.	One chromosome extra to the diploid	ii)	Tetrasomy
C.	One chromosome loses from diploid	iii)	Trisomy
D.	Two individual chromosomes lose from		double monosomy
	Diploid		

- a) A-i, B-iii, C-ii, D-iv
- b) A-ii, B-iii, C-iv, D-I
- c) A-ii, B-iii, C-i, D-iv
- d) A-iii, B-ii, C-i, D-iv

3.	Which of the following sentences are correct?					
	1. The offspring exhibit only parental combinations due to incomplete linkage					
	2. The linked genes exhibit some crossing over in complete linkage					
	3. The separation of two linked genes are possible in incomplete linkage					
	4. Crossing over is absent in complete linkage	;				
	a) 1 and 2 b) 2 and 3	c) 3 and 4	d) 1 and 4			
4.	Due to incomplete linkage in maize, the ratio	of parental and recomb	inants are			
	a) 50:50 b) 7:1:1:7	c) 96.4: 3.6	d) 1:7:7:1			
5.	The point mutation sequence for transition, tra	ansition, transversion a	nd transversion in			
	DNA are					
	a) A to T, T to A, C to G and G to C	b) A to G, C to	T, C to G and T to A			
	c) C to G, A to G, T to A and G to A	d) G to C, A to	T, T to A and C to G			
6.	If haploid number in a cell is 18. The double is	nonosomic and trisomi	c number will be			
	a) 35 and 37 b) 34 and 35	c) 37 and 35	d) 17 and 19			
7.	Changing the codon AGC to AGA represents					
	a) missense mutation		nse mutation			
	b) frameshift mutation		on mutation			
8.	Assertion (A): Gamma rays are generally use					
	Reason (R) : Because they carry lower end	ergy to non-ionize elect	trons from atom			
	a) A is correct. R is correct explanation of A					
	b) A is correct. R is not correct explanation of	A				
	c) A is correct. R is wrong explanation of A					
	d) A and R is wrong					
		•				
	Lesson	-4				
	Principles and Process	es of Biotechnolo	ogy			
1.	Restriction enzymes are					
	a) Not always required in genetic engineering					
	b) Essential tools in genetic engineering					
	c) Nucleases that cleave DNA at specific sites					
	d) both b and c					
2.	Plasmids are					
	a) circular protein molecules	b) required by ba	acteria			
	c) tiny bacteria	d) confer resista	nce to antibiotics			
3.	EcoRI cleaves DNA at					
	a) AGGGTT	b) GTATATC				
	b)GAATTC	d) TATAGC				

- 4. Genetic engineering is
 - a) making artificial genes.
 - b) hybridization of DNA of one organism to that of the others.
 - c) production of alcohol by using micro organisms.
 - d) making artificial limbs, diagnostic instruments such as ECG, EEG etc
- 5. Consider the following statements:
 - I. Recombinant DNA technology is popularly known as genetic engineering is a stream of biotechnology which deals with the manipulation of genetic materials by man invitro
 - II. pBR322 is the first artificial cloning vector developed in 1977 by Boliver and Rodriguez from E.coli plasmid
 - III. Restriction enzymes belongs to a class of enzymes called nucleases.

Choose the correct option regarding above statements

- a) I & II
- b) I & III
- c) II & III
- d) I, II & III
- 6. The process of recombinant DNA technology has the following steps
 - I. amplication of the gene
 - II. Insertion of recombinant DNA into the host cells
 - III. Cutting of DNA at specific location using restriction enzyme.
 - IV. Isolation of genetic material (DNA) Pick out the correct sequence of step for recombinant DNA technology.
 - a) II, III, IV, I
- b) IV, II, III, I
- c) I, II, III, IV
- d) IV, III, I, II
- 7. Which one of the following palindromic base sequence in DNA can be easily cut at about the middle by some particular restriction enzymes?
 - a) 5 CGTTCG 3 3 ATCGTA 5
 - b) 5 GATATG 3 3 CTACTA 5 c)
 - 5 GAATTC 3 3 CTTAAG 5
 - d) 5 CACGTA 3 3 CTCAGT 5
- 8. pBR 322, BR stands for Identify the correctly matched pair
 - a) Plasmid Bacterial Recombination
 - b) Plasmid Bacterial Replication
 - c) Plasmid Boliver and Rodriguez
 - d) Plasmid Baltimore and Rodriguez
- 9. Which of the following one is used as a Biosensors? Pollen tube was discovered by
 - a) Electrophoresis
 - b) Bioreactors
 - c) Vectors
 - d) Electroporation

10. Match the following

Column			Column
Α			В
1	Exonuclease	a)	add or remove phosphate
2	Endonuclease	b) binding the DNA fragments	
3	Alkaline Phosphatase	c)	cut the DNA at terminus
4	Ligase	d) cut the DNA at middle	
	1 2 3 4		

- 1 2 3 4
 (A) a b c d
 (B) c d b a
 (C) a c b d
 (D) c d a b
- 11. In which techniques Ethidium Bromide is used?
 - a) Southern Blotting techniques

b) Western Blotting techniques

c) Polymerase Chain Reaction

- d) Agrose Gel Electroporosis
- 12. **Assertion :** Agrobacterium tumifaciens is popular in genetic engineering because this bacterium is associated with the root nodules of all cereals and pulse crops

Reason : A gene incorporated in the bacterial chromosomal genome gets atomatically transferred to the cross with which bacterium is associated

- a) Both assertion and reason are true. But reason is correct explanation of assertion.
- b) Both assertion and reason are true. But reason is not correct explanation of assertion.
- c) Assertion is true, but reason is false.
- d) Assertion is false, but reason is true.
- e) Both assertion and reason are false.
- 13. Which one of the following is not correct statement?
 - a) Ti plasmid causes the bunchy top disease
 - b) Multiple cloning site is known as Polylinker
 - c) Non viral method transfection of Nucleic acid in cell
 - d) Polylactic acid is a kind of biodegradable and bioactive thermoplastic
- 14. An analysis of chromosomal DNA using the southern hybridisation technique does not use
 - a) Electrophoresis

b) Blotting

c) Autoradiography

- d) Polymerase Chain Reaction
- 15. An antibiotic gene in a vector usually helps in the selection of
 - a) Competent cells

b) Transformed cells

b) Recombinant cells

d) None of the above

- 16. Some of the characteristics of Bt cotton are
 - a) Long fibre and resistant to aphids
 - b) Medium yield, long fibre and resistant to beetle pests
 - c) high yield and production of toxic protein crystals which kill dipteran pests.
 - d) High yield and resistant to ball worms

Lesson – 5 Plant Tissue culture

- 1. Totipotency refers to
 - a) capacity to generate genetically identical plants.
 - b) capacity to generate a whole plant from any plant cell / explant.
 - c) capacity to generate hybrid protoplasts.
 - d) recovery of healthy plants from diseased plants.
- 2. Micro propagation involves
 - a) vegetative multiplication of plants by using micro-organisms.
 - b) vegetative multiplication of plants by using small explants.
 - c) vegetative multiplication of plants by using microspores.
 - d) Non-vegetative multiplication of plants by using microspores and megaspores.
- 3. Match the following

Column A Column B		Colu	mn B		
1)	Totipotency	A)	Reversion of mature cells into meristerm		
2)) Dedifferentiation B)		Biochemical and structural changes of cells		
3)	B) Explant (Properties of living cells develops into entire plant		
4)) Differentiation		Selected plant tissue transferred to culture medium		
	1 2 3	4			

	1	2	3	4
(A)	C	A	D	В
(B)	A	C	В	D
(C)	В	A	D	C
(D)	D	В	C	A

- 4. The time duration for sterilization process by using autoclave is_minutes and the temperature is
 - a) 10 to 30 minutes and 125° C

b) 15 to 30 minutes and 121° C

b) 15 to 20 minutes and 125° C

- d) 10 to 20 minutes and 121° C
- 5. Which of the following statement is correct
 - a) Agar is not extracted from marine algae such as seaweeds.
 - b) Callus undergoes differentiation and produces somatic embryoids.
 - c) Surface sterilization of explants is done by using mercuric bromide
 - d) PH of the culture medium is 5.0 to 6.0

6.	Select the incorrect statement from given statement a) A tonic used for cardiac arrest is obtained from Dib) Medicine used to treat Rheumatic pain is extracted c) An anti malarial drug is isolated from Cinchona of d) Anti-cancinogenic property is not seen in Catharanthus	d from Capsicum annum fficinalis.			
7.	Virus free plants are developed from				
	a) Organ culture	b) Meristem culture			
	c) Protoplast culture	d) Cell suspension culture			
8.	The prevention of large-scale loss of biological inter	, ±			
	a) Biopatent	b) Bioethics			
	c) Biosafety	d) Biofuel			
9.	Cryopreservation means it is a process to preserve p	lant cells, tissues or organs			
	a) at very low temperature by using ether.				
	b) at very high temperature by using liquid nitrogen				
	c) at very low temperature of -196 by using liquid nitrogen				
	d) at very low temperature by using liquid nitrogen				
10.	Solidifying agent used in plant tissue culture is				
	a) Nicotinic acid b) Cobaltous chloride				
	c) EDTA	d) Agar			
	Lesson – 6				
	Principles of Eco	logy			
1.	Arrange the correct sequence of ecological hierarchy a) Individual organism → Population Landscape → b) Landscape → Ecosystem → Biome → Biosphere c) Community → Ecosystem → Landscape → Bior d) Population → organism → Biome → Landscape Ecology is the study of an individual species is calle	Ecosystem e e e e e e e e e e e e e e e e e e			
۷.		Species ecology iv) Synecology			
	, , , , , , , , , , , , , , , , , , , ,	and iv only d) ii and iii only			
3.	A specific place in an ecosystem, where an organism	,			
		c) landscape d) biome			
4.	Read the given statements and select the correct opti	· · · · · · · · · · · · · · · · · · ·			
-	i) Hydrophytes possess aerenchyma to support thems				
	ii) Seeds of Viscum are positively photoblastic as the				

iv) High temperature reduces use of water and solute absorption by roots.

it is present inside the micropores.

iii) Hygroscopic water is the only soil water available to roots of plant growing in soil as

	a) 1, 11, and 111 or	•	b) 11, 111 and 1V					
	c) ii and iii only		d) i and ii	only				
5.	Which of the giv	en plant produces cardia	c glycosides?					
	a) Calotropis	b) Acacia	c) Nepenthes	d) Utricularia				
6.	Read the given s	tatements and select the	correct option.					
	i) Loamy soil is best suited for plant growth as it contains a mixture of silt, sand and clay.							
	ii) The process of	of humification is slow in	case of organic remains cont	taining a large				
	amount of lig	gnin and cellulose.						
	iii) Capillary wa micropores.	ter is the only water avai	lable to plant roots as it is pre	esent inside the				
	=	ade plant have more total	chlorophyll per reaction cen	tre, low ratio of chl				
	<i>'</i>	re usually thinner leaves.						
	a) i, ii and iii on	•		ii, iii and iv only				
	c) i, ii and iv on	ly	d)	ii and iii only.				
7.	Read the given s	statements and select the	correct option.					
	Statement A: Cattle do not graze on weeds of Calotropis.							
	Statement B: Calotropis have thorns and spines, as defense against herbivores.							
	a) Both statements A and B are incorrect.							
	b) Statement A is correct but statement B is incorrect.							
	c)Both statements A and B are correct but statement B is not the correct explanation of							
	statement A.							
	d) Both statements A and B are correct and statement B is the correct explanation of							
	statement A.							
8.		ilable for plants is						
	a) gravitational		· · · · · · · · · · · · · · · · · · ·	ally bound water				
	c) capillary water d) hygroscopic water							
9.	Read the followi	ng statements and fill up	the blanks with correct optio	n.				
	i) Total soil water	er content in soil is called	1					
	ii) Soil water no	t available to plants is ca	lled					
	iii) Soil water available to plants is called							
		(i)	(ii)	(iii)				
	(a)	Holard	Echard	Chresard				
	(b)	Echard	Holard	Chresard				
	(c)	Chresard	Echard	Holard				
	(d)	Holard	Chresard	Echard				

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

Column – I			Column - II		
I)	0.2 to 2.00	I)	Silt soil		
II)	Less than 0.002 mm	II)	Clayey soil		
III)	0.002 to 0.02 mm	III)	Sandy soil		
IV)	0.002 to 0.2 mm	IV)	Loamy soil		

	I	II	III	IV
(a)	ii	iii	Iv	I
(b)	iv	i	iii	Ii 🔷
(c)	iii	ii	i	Iv
(d)	None of the above			ve

- 11. The plant of this group are adapted to live partly in water and partly above substratum and free from water
 - a) Xerophytes
- b) Mesophytes
- c) Hydrophytes
- d) Halophytes

12. Identify the A, B, C and D in the given table

Interaction	Effects on species X	Effects on species Y
Mutualism	A	(+)
В	(+)	(-)
Competition	(-)	С
D	(-)	0

	A	В	C	D
(a)	(+)	Parasitism	(-)	Amensalism
(b)	(-)	Mutalism	(+)	Competition
(c)	(+)	Competition	(0)	Mutalism
(d)	(0)	Amenasalism	(+)	Parasitism

- 13. Ophrys an orchid resembling the female of an insect so as to able to get pollinated is due to phenomenon of
 - a) Myrmecophily

b) Ecological equivalents

c) Mimicry

d) None of these

14 A func living mitus	aan fiyina ayanahaataniyan y	vyhiah aan alaa famm avymah	iatia aggariation			
	gen fixing cyanobacterium	wnich can also form symc	notic association			
with the water ferr						
a) Nostoc	b) Anabaena	c) chlorella	d) Rhizobium			
15. Pedogenesis refers	s to					
a)Fossils	b) Water	c) Population	d) Soil			
16. Mycorrhiza promo	otes plant growth by					
a) Serving as a pla	nt growth regulators					
b) Absorbing inorga	b) Absorbing inorganic ions from soil					
c) Helping the plan	c) Helping the plant in utilizing atmospheric nitrogen					
d) Protecting the p	lant from infection.					
17. Which of the follo	wing plant has a non-succul	lent xerophytic and thick l	eathery leaves			
with waxy coating						
a) Bryophyllum	b) Ruscus	c) Nerium d) Calotropis			
18. In a fresh water environment like pond, rooted autotrophs are						
a) Nymphaea and ty	pha	b) Ceratophyllum	and Utricularia			
c) Wolffia and pis	tia	d) Azolla and lemi	na			
9. Match the following and choose the correct combination from the options given below						

Column – I (Interactio n)			Column - II Examples		
I)	Mutualism	i)	Trichoderma and Penicillum		
II)	Commensalism	ii)	Balanophora, Orobanche		
III)	Parasitism	iii)	Orchids and Ferns		
IV)	Predation	iv)	Lichen and Mycorrhiza		
V)	Amensalism	iv)	Nepanthes and Diaonaea		

	I	II	Ш	IV	V
(a)	i	ii	iii	Iv	V
(b)	ii	iii	iv	V	i
(c)	iii	Iv	V	I	ii
(d)	iv	iii	ii	iv	I

20.	20. Strong, sharp spines that get attached to animal's feet are found in the fruits of						
	a) Argemone	b) Ecballium	c) Heritier	d) Crossandra			
21.	Sticky glands of Boo	erhaavia and Cleom	e support				
	a) Anemochory		b) Zoochory				
	c) Autochory		C	d) Hydrochory			

Lesson - 7

Ecosystem

1.	Which of the following is not abiotic compo	nent of the ecosystem?	
	a) Bacteria	b) Humus	
	b)Organic compounds	d) Inorganic compou	nds
2.	Which of the following is / are not a natural e	ecosystem?	
	a) Forest ecosystem	b) Rice field	
	b) Grassland ecosystem	d) Desert ecosystem	W
3.	Pond is a type of		
	a) forest ecosystem	b) grassland ecosyste	m
	c) marine ecosystem	d) fresh water ecosyster	m
4.	Pond ecosystem is		
	a) not self sufficient and self regulating		
	b) partially self sufficient and self regulating		
	c) self sufficient and not self regulating		
	d) self sufficient and self regulating	1.0	
5.	Profundal zone is predominated by heterotro	phs in a pond ecosystem, bec	ause of
	a) with effective light penetration	b) no effective light per	netration
	c) complete absence of light	d) a and b	
6.	Solar energy used by green plants for photos	ynthesis is only	
	a) 2 – 8% b) 2 – 10%	c) 3 – 10%	d) 2 – 9%
7.	Which of the following ecosystem has the hig	hest primary productivity?	
	a) Pond ecosystem	b) Lake ecosystem	
	c) Grassland ecosystem	d) Forest ecosystem	
8.	Ecosystem consists of		
á	a) decomposers	b) producers	
(c) consumers	d) all of the above	
9.	Which one is in descending order of a food ch	nain	
	a) Producers \rightarrow Secondary consumers \rightarrow Pr	imary consumers → Tertiary of	consumers
	b) Tertiary consumers → Primary consumer	$s \rightarrow$ Secondary consumers \rightarrow	Producers
	c) Tertiary consumers \rightarrow Secondary consumers	→ Primary consumers → Produ	cers
	d) Tertiary consumers → Producers → Prima	ry consumers → Secondary c	onsumers
10.	Significance of food web is / are		
	a) it does not maintain stability in nature	b) it shows patterns of energy	y transfer
	c) it explains species interaction	d) b and c	
11.	The following diagram represents	т.	

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a) Pyramid of number in a grassland ecosystemb) Pyramid of number in a pond ecosystemc) Pyramid of number in a forest ecosystemd) Pyramid of biomass in a pond ecosystem

- 12. Which of the following is / are not the mechanism of decomposition

 a) Eluviation
 b) Catabolism
 c) Anabolism
 d) Fragmentation

 13. Which of the following is not a sedimentary cycle

 a) Nitrogen cycle
 b) Phosphorous cycle
 b) Sulphur cycle
 d) Calcium cycle

 14. Which of the following are not regulating services of ecosystem services

 i) Genetic resources
 ii) Recreation and aesthetic values
 iii) Invasion resistance
 iv) Climatic regulation
 - Lesson 8

c) i and ii

Environmental Issues

- 1. Which of the following would most likely help to slow down the greenhouse effect.
 - a) Converting tropical forests into grazing land for cattle.

b) ii and iv

- b) Ensuring that all excess paper packaging is buried to ashes.
- c) Redesigning landfill dumps to allow methane to be collected.
- d) Promoting the use of private rather than public transport.
- 2. With respect to Eichhornia

a) i and iii

Statement A: It drains off oxygen from water and is seen growing in standing water. Statement B: It is an indigenous species of our country.

- a) Statement A is correct and Statement B is wrong
- b) Both Statements A and B are correct.
- c) Statement A is correct and Statement B is wrong.
- d) Both statements A and B are wrong.
- 3. Find the wrongly matched pair.
 - a) Endemism Species confined to a region and not found anywhere else.
 - b) Hotspots Western ghats
 - c) Ex-situ Conservation Zoological parks
 - d) Sacred groves Saintri hills of Rajasthan
 - e) Alien sps. Of India Water hyacinth
- 4. Depletion of which gas in the atmosphere can lead to an increased incidence of skin cancer?
 - a) Ammonia
- b) Methane
- c) Nitrous oxide
- d) Ozone

d) i and iv

- 5. One green house gas contributes 14% of total global warming and another contributes 6%. These are respectively identified as
 - a) N20 and CO2

b) CFCs and N20

c) CH₄ and CO₂

d) CH4 and CFCs

6. One of the chief reasons among the followin making endangered is	g for the depletion in the number of species
a) over hunting and poaching	b) green house effect
c) competition and predation	d) habitat destruction
7. Deforestation means	
a) growing plants and trees in an area where	there is no forest
b) growing plants and trees in an area where	the forest is removed
c) growing plants and trees in a pond	X
d) removal of plants and trees	
8. Deforestation does not lead to	
•	b) soil erosion
c) alternation of local weather conditions	d) Destruction of natural habitat weather conditions
9. The unit for measuring ozone thickness	
a) Joule b) Kilos	c) Dobson d) Watt
10. People"s movement for the protection of en	vironment in Sirsi of Karnataka is
a) Chipko movement	b) Amirtha Devi Bishwas movement
c) Appiko movement	d) None of the above
11. The plants which are grown in silivpasture	system are
a) Sesbania and Acacia	b) Solenum and Crotalaria
c) Clitoria and Begonia	d) Teak and sandal
Less	on – 9
Plant I	Breeding
1. Assertion: Genetic variation provides the ra	aw material for selection
Reason: Genetic variations are differences	in genotypes of the individuals.
a) Assertion is right and reason is wrong.	b) Assertion is wrong and reason is right.
c) Both reason and assertion is right.	d) Both reason and assertion is wrong.
2. While studying the history of domestication	of various cultivated plantswere
recognized earlier a) Centres of origin	b) Centres of domestication
c) Centres of hybrid	d) Centres of variation
3. Pick out the odd pair.	d) Centres of variation
a) Mass selection - Morphological character	rs
b) Purline selection - Repeated self pollinati	
c) Clonal selection - Sexually propagated	
d) Natural selection - Involves nature.	

4. Match Column I with Column II

	Column	Column	
	I	П	
i)	William S. Gaud	I)	Heterosis
ii)	Shull	II)	Mutation breeding
iii)	Cotton mother	III)	Green revolution
iv)	Muller and stadler	IV)	Natural hybridization

(a)	i - I	ii - II	iii – III	iv - IV
(b)	i -III	ii -I	iii –IV	iv –II
(c)	i -IV	ii -II	iii –I	iv-III
(d)	i - II	ii -IV	iii –III	iv –I

	(c)	1 -IV	11 -II	111 — l	1V-III		
	(d)	i - II	ii -IV	iii –III	iv –I		
5. T	he quickes	st method	of plant l	oreeding is		7	
a) Introduct	ion			b) Selec	tion	
c) Hybridiz	ation			d) Muta	tion breeding	5
6. I	Desired imp	proved va	riety of e	conomically us	seful crops are rais	sed by	
a) Natural S	Selection			b) Hybri	idization	
c) Mutation	1			d) Biofe	rtilisers	
7. P	lants havii	ng simila	r genotype	es produced by	plant breeding ar	e called	
a) clone				b) haploid		
c) autopoly	ploid			d) genor	ne	
8. I	mporting b	etter vari	eties and	plants from ou	tside and acclima	tising them t	o local
e	nvironmer	ntis called	1				
a) cloning		b) he	eterosis	c) selec	tion	d) introduction
9. I) warfing g	ene of wl		♦			
) pal 1			mita 1	c) Norii	n 10	d) pelita 2
			e plants of	the same varie	<u> </u>		
	a) interspecific			b) inter varietal			
	c) intra varietal			d) inter generic			
			s a result c	of repeat self po	ollination a cross	=	=
	a) pure line				o) pedigree li	ine	
	c) inbreed line d) heterosis						
	-	atna are t		warf varieties			
a) wheat		b) rice		c) cowpea		d) mustard

- 13. Which one of the following are the species that are crossed to give sugarcane varieties with high sugar, high yield, thick stems and ability to grow in the sugarcane belt of North India?
 - a) Saccharum robustum and Saccharum officinarum
 - b) Saccharum barberi and Saccharum officinarum
 - c) Saccharum sinense and Saccharum officinarum
 - d) Saccharum barberi and Saccharum robustum
- 14. Match column I (crop) with column II (Corresponding disease resistant variety) and select the correct option from the given codes.

	Column I		Column II
I)	Cowpea	i)	Himgiri
II)	Wheat	ii)	Pusa Komal
III)	Chilli	iii)	Pusa sadabahar
IV)	Brassica	iv)	Pusa Swarnim

	I	II	Ш	IV
(a)	Iv	iii	ii	i
(b)	Ii	i	iii	iv
(c)	Ii	iv	i	iii
(d)	I	iii	iv	ii

15.A wheat variety, Atlas 66 which has been used as a donor for improving cultivated wheat, which is rich in

a) iron

- b) carbohydrates
- c) proteins
- d) vitamins
- 16. Which one of the following crop varieties correct matches with its resistance to a disease?

a) Pusa Komal	Bacterial blight
b) Pusa Sadabahar	White rust
c) Pusa Shubhra	Chilli mosaic virus
d) Brassica	Pusa swarnim

- 17. Which of the following is incorrectly paired?
 - a) Wheat
- Himgiri
- b) Milch breed Sahiwal
- c) Rice
- Ratna
- d) Pusa Komal Brassica.

18. Match list I with list II

	List		List
	I		II
i)	Gree Living N ₂	a)	Aspergillus sp
ii)	Symbiotic N ₂	b)	Amanita sp
iii)	P Solubilizing	c)	Anabaena azollae
iv)	P Mobilizing	d)	Azotobactor

(a)	i-c	ii – a	iii – b	iv – d
(b)	i-d	ii – c	iii – a	iv – b
(c)	i – a	ii – c	iii – b	iv – d
(d)	i – b	ii – a	iii – d	iv – c

Economically Useful plants and Entrepreneurial Botany

- 1. Consider the following statements and choose the right option.
 - i) Cereals are members of grass family.
 - ii) Most of the food grains come from monocotyledon.
 - a) (i) is correct and (ii) is wrong

b) Both (i) and (ii) are correct

c) (i) is wrong and (ii) is correct

- d) Both (i) and (ii) are wrong
- 2. Assertion: Vegetables are important part of healthy eating.

Reason: Vegetables are succulent structures of plants with pleasant aroma and flavours. a) Assertion is correct, Reason is wrong

- b) Assertion is wrong, Reason is correct
- c) Both are correct and reason is the correct explanation for assertion.
- d) Both are correct and reason is not the correct explanation for assertion.
- 3. Groundnut is native of _____a) Philippines b) India c) North America d) Brazil
- 4. Statement A: Coffee contains caffeine Statement

B: Drinking coffee enhances cancer

a) A is correct, B is wrong

b) A and B – Both are correct

c) A is wrong, B is correct

d) A and B - Both are wrong

- 5. Tectona grandis is coming under family
 - a) Lamiaceae

b) Fabaceae

c) Dipterocaipaceae

d) Ebenaceae

c) Triticum duram

d) Zea mays

6. Tamarindus indica is indigenous to	
a) Tropical African region	b) South India, Sri Lanka
c) South America, Greece	d) India alone
7. New world species of cotton	
a) Gossipium arboretum	b) G.herbaceum
c) Both a and b	d) G.barbadense
8. Assertion: Turmeric fights various kinds of ca	ncer
Reason: Curcumin is an anti-oxidant present in	in turmeric
a) Assertion is correct, Reason is wrong	
b) Assertion is wrong, Reason is correct	
c) Both are correct	. (7)
d) Both are wrong	
9. Find out the correctly matched pair.	
a) Rubber - Shorea robusta	b) Dye - Lawsonia inermis
c) Timber - Cyperus papyrus	d) Pulp - Hevea brasiliensis
10. Observe the following statements and pick out	the right option from the
following Statement I – Perfumes are manufact	ured from essential oils.
Statement II – Essential oils are formed at diffe	rent parts of the plants.
a) Statement I is correct	b) Statement II is correct
c) Both statements are correct	d) Both statements are wrong
11. Observe the following statements and pick out	the right option from the
following: Statement I: The drug sources of Si	ddha include plants, animal parts,
ores and minerals. Statement II: Minerals are u	sed for preparing drugs with long
shelf-life.	
a) Statement I is correct	b) Statement II is correct
c) Both statements are correct	d) Both statements are wrong
12. The active principle trans-tetra hydro canabial	is present in
a) Opium	b) Curcuma
c) Marijuana	d) Andrographis
13. Which one of the following matches is correct.	?
a) Palmyra - Native of Brazil	
b) Saccharun - Abundant in Kanyakuma	ari
c) Steveocide - Natural sweetener	
d) Palmyra sap - Fermented to give ethan	ol
14. The only cereal that has originated and domest	icated from the New world.
a) Oryza sativa	
b)Triticum asetumn	

