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## English – Tamil Terminology

### Unit VI – Reproduction in plants

| | |
|---|---|
| Apomixis | கருவுறா இனப்பெருக்கம் |
| Apospory | கருவுறா வித்து |
| Archesporium | முன்வித்து திசு |
| Cleistogamous flower | மூடிய பூ |
| Cryopreservation | குளிர்பாதுகாப்பு |
| Embryo sac | கருப்பை |
| Floral primordium | மலர் தோற்றுவி |
| Funiculus | சூல் காம்பு |
| Microsporogenesis | நுண் வித்துருவாக்கம் |
| Polyembryony | பல்கருநிலை |
| Scion | ஒட்டுத் தண்டு |
| Stock | வேர்கட்டை |

### Unit VII - Genetics

| | |
|---|---|
| Allele | அல்லீல் |
| Allopolyploidy | அயல்பன்மடியம் |
| Alternative splicing | மாற்று இயைத்தல் |
| Anticodons | எதிர் குறியன்கள் |
| Autopolyploidy | தன்பன்மடியம் |
| Backcross | பிற்கலப்பு |
| Blending inheritance | கலப்பு பாரம்பரியம் |
| Branch migration | கிளைவழி இடம்பெயர்தல் |
| Capping | நுனி மூடுதல் |
| Coding strand | குறியீட்டு இழை |
| Codominance | இணைஓங்குத்தன்மை |
| Complete linkage | முழுமையான பிணைப்பு |
| Complementation test | நிரப்பு சோதனை |
| Coupling | இணைப்பு |
| Crossing over | குறுக்கேற்றம் |
| DNA metabolism | DNA வளர்சிதை மாற்றம் |
| Dominance | ஓங்குத்தன்மை |
| Duplication | இரட்டிப்பாதல் |
| $F_1$ generation (first filial generation) | முதல் மகவுச்சந்ததி |

| | |
|---|---|
| Frame shift mutation | கட்ட நகர்வு சடுதி மாற்றம் |
| Gene interaction | மரபணு இடைச்செயல் |
| Gene mapping | மரபணு வரைபடம் |
| Genome | மரபணுத்தொகையம் |
| Genotype | மரபணுவகையம் |
| Haploidy | ஒருமடியம் (பன்மம்) |
| Heredity | பாரம்பரியம் |
| Heterozygous | மாறுபட்டபண்பிணைவு |
| Homologous chromosome | ஒத்த அமைவிட குரோமோசோம் |
| Incomplete dominance | முழுமைபெறா ஓங்குத்தன்மை |
| Incomplete linkage | முழுமையற்ற பிணைப்பு |
| Independent assortment | சாராஒதுங்கு விதி |
| Internal methylation | அக மெத்திலாக்கம் |
| Inversion | தலைகீழ் திருப்பம் |
| Jumping genes | தாவும் மரபணுக்கள் |
| Linkage group | பிணைப்புத் தொகுதி |
| Locus | நிலையிடம் |
| Map unit | வரைபட அலகு |
| Mis-sense mutation | தவறாக வெளிப்பாட்டடையும் சடுதிமாற்றம் |
| Monohybrid | ஒரு பண்புக்கலப்புயிரி |
| Multiple alleles | பல்கூட்டு அல்லீல்கள் |
| Mutagen | சடுதிமாற்றக் காரணி |
| Mutation | சடுதிமாற்றம் |
| Non-sense mutation | வெளிப்பாடடையாத சடுதி மாற்றம் |
| Palindrome | முன்பின்ஒத்தவரிசை |
| Phenotype | புறத்தோற்றவகையம் |
| Purity of gametes | இனச்செல்கலப்பற்றது |
| Recessive | ஒடுங்குத்தன்மை |
| Repulsion | விலகல் |
| Restriction enzymes | தடைக்கட்டு நொதிகள் |
| RNA Splicing | RNA இயைத்தல் |
| Saltation | திடீர் மாற்றம் |
| Segregation | தனித்தொதுங்குதல் |
| Sequence | தொடர்வரிசை |
| Sex linkage | பால் பிணைப்பு |
| Silent mutation | அமைதி சடுதிமாற்றம் |
| Split genes | பிளவுறு மரபணு |
| Start codon | தொடக்கக் குறியன் |
| Synaptonemal complex | இணைப்பிணைப்புக் கூட்டமைப்பு |
| Synopsis | இணைச் சேர்தல் |
| Tailing | வாலாக்கம் |
| Tassel seed | கதிர் குஞ்சவிதை |
| Template strand | வார்ப்பு இழை |
| Test cross | சோதனைக்கலப்பு |
| Tetrad stage | நான்மய நிலை |
| Three point test cross | முப்புள்ளி சோதனைக் கலப்பு |
| Translocation | இடம்பெயர்தல் |

## UNIT VIII - Biotechnology

| | |
|---|---|
| Artificial seeds | செயற்கை விதைகள் |
| Aseptic condition | நுண்ணுயிர் அற்ற நிலை |
| Autoradiography | கதிரியக்க படமெடுப்பு |
| Biochip | உயிரி சில்லு |
| Biomass | உயிரி கூளம் |
| Biopharming | உயிரி மருந்தாக்கம் |
| Biopiracy | உயிரிபொருள் கொள்ளை |
| Bioreactor / Fermentor | உயிரி வினைகலன் / நொதிகலன் |
| Biosynthesis | உயிரி உற்பத்தி |
| Buffer | தாங்கல் கரைசல் |
| Carriers | கடத்தி |
| Cloned Plants | நகலொத்த தாவரங்கள் |
| Cloning | நகல்பெருக்கம் |
| Cloning Site | நகலாக்க களம் |
| Cryoconservation | உறைகுளிர் வெப்பநிலை பேணல் |
| Cybrids | கலப்பின பிளாஸ்மிட்கள் |

| | |
|---|---|
| Dedifferentiation | வேறுபாடு இழத்தல் |
| Differentiation | வேறபாடுறுதல் |
| DNA Bank | DNA வங்கி |
| Downstream Process | கீழ்காற் பதப்படுத்தம் |
| Embryogenesis | கரு உருவாக்கம் |
| Embryoids | சிறுகருக்கள் |
| Explant | பிரிகூறு |
| Fermentation | நொதித்தல் |
| Gel Electrophoresis | இழும மின்னாற் பிரித்தல் |
| Gene | மரபணு |
| Gene Bank | மரபணு வங்கி |
| Gene Gun | மரபணு துப்பாக்கி |
| Gene Manipulation Technique | மரபணு கையாளும் தொழில்நுட்பம் |
| Genetically modified plants | மரபணு மாற்றப்பட்ட தாவரங்கள் |
| Genome | மரபணு தொகையம் |
| Green Fluorescence Protein | பசுமை ஒளிர் புரதம் |
| Hardening | வன்மையாக்குதல் |
| Human Genome Sequence | மனித மரபணு தொகைய தொடர் வரிசை |
| Inoculation | உள்நுழைத்தல் |
| Insert | செருகி |
| invitro culture | ஆய்வுகூட சோதனை வளர்ப்பு |
| Isolation | தனிமைபடுத்துதல் |
| Laminar air flow chamber | சீரடுக்கு காற்று பாய்வு அறை |
| Liquid medium/ liquid culture | திரவ ஊடகம் / திரவ வளர்ப்பு |
| Marker | அடையாளக்குறி |
| Microinjection | நுண்செலுத்துதல் |
| Micropropagation | நுண்பெருக்கம் |
| Mycoremediation | பூஞ்சை சீரமைப்பாக்கம் |
| Nutritional medium | ஊட்ட ஊடகம் |
| Organogenesis | உறுப்புகளாக்கம் |
| Palindrome Sequence | முன்பின் ஒத்த வரிசை |
| Phytoremediation | தாவர சீரமைப்பாக்கம் |

| | |
|---|---|
| Pollen Bank | மகரந்த வங்கி |
| Probe | துருவி |
| Recombinant DNA | மறுகூட்டிணைவு DNA |
| Recombinant | மறுகூட்டிணைவு |
| Redifferentiation | மறுவேறுபாடுறுதல் |
| Regeneration | மீள் உருவாக்கம் |
| Replica Blotting Technique | நகல் முலாம் தொழில்நுட்பம் |
| Restriction Enzyme | தடை கட்டு நொதி |
| Somatic Embryoids | உடல் கருவுருக்கள் |
| Sterile condition | நுண்ணுயிர் நீக்கிய நிலை |
| Sterilization | நுண்ணுயிர் நீக்கம் |
| Tissue culture | திசு வளர்ப்பு |
| Totipotency | முழு ஆக்குத்திறன் பெற்றவை |
| Transfection | தொற்றுதல் |
| Transposon | இடமாற்றிக் கூறுகள் |
| Upstream Process | மேல்காற் பதப்படுத்தம் |
| Vector | தாங்கி கடத்தி |
| Virus free plants | வைரஸ் அற்றத் தாவரங்கள் |
| Walking Genes | நடக்கும் மரபணுக்கள் |

## UNIT IX – Plant Ecology

| | |
|---|---|
| Agroforestry | வேளாண்காடுகள் |
| Alien Invasive species | அயல் ஊடுருவும் சிற்றினங்கள் |
| Allelopathic chemicals | வேதியத்தடைப் பொருட்கள் |
| Altitude | குத்துயரம் |
| Autecology | சுய சூழ்நிலையில் |
| Benthic | ஆழ்மிகு மண்டலம் |
| Benthos | ஆழ் உயிரிகள் |
| Biochar | உயிரித்தொகுப்பு |
| Biome | உயிர்மம் |
| Biotope | உயிரி நில அமைவு |

| | |
|---|---|
| Carbon foot print | கார்பன் தடம் |
| Carbon sequestration | கார்பன் ஒதுக்கமடைதல் |
| Carbon sink | கார்பன் தேக்கி |
| Co-evolution | கூட்டுப் பரிணாமம் |
| Decomposers | சிதைப்பவைகள் |
| Ecological hierarchy | சூழ்நிலைப்படிகள் |
| Ecotone | இடைச்சூழலமைப்பு |
| Ecotope | சூழல் நில அமைவு |
| Furgivores | பழ உண்ணிகள் |
| Gnano | கடல் அருகு வாழ் பறவைகளின் எச்சம் |
| Habitat | புவி வாழிடம் |
| Humus | மட்கு |
| Latitude | விரிவகலம் |
| Mimicry | பாவனை செயல்கள் |
| Niche | செயல் வாழிடம் |
| Ozone depletion | ஓசோன் குறைதல் |
| Photosyntheicaly active radioactive | ஒளிச்சேர்க்கை சார் செயலூக்கக் கதிர்வீச்சு |
| Plant Ecology | தாவர சூழ்நிலையியல் |
| Predation | கொன்றுண்ணும் வாழ்க்கை முறை |
| Sacred groves | கோயில் காடுகள் |
| Seedball | விதைப்பந்து |
| Social forestry | சமூகக்காடுகள் |
| Soil profile | மண்ணின் நெடுக்குவெட்டு விவரம் |
| Standing crops | நிலைப்பயிர் |
| Standing quality | நிலைத்தரம் |
| Succession | வழிமுறை வளர்ச்சி |
| Synecology | கூட்டுச் சூழ்நிலையில் |
| Topographic factors | நிலப்பரப்பு வடிவமைப்பு காரணிகள் |
| Trophic level | ஊட்டஞ்சார் மட்டம் |

## UNIT X - Economic Botany

| | |
|---|---|
| Acclimatization | புதிய தட்பவெப்ப நிலைக்கு பழகுதல் |
| Archeological records | தொல்லியல் பதிவுகள் |
| Aromatic plant | நறுமண தாவரம் |
| Bio medicine | உயிரிமூலக்கூறு மருந்து |
| Biofertilizers | உயிரி உரம் |
| Culinary | சமையல் |
| Decoction | வடிநீர் |
| Domestification | வளர்ப்புச் சூழலுக்கு உட்படுத்துதல் |
| Emasculation | மகரந்தத்தாள் நீக்கம் |
| Entrepreneur | தொழில் முனைவோர் |
| Essential oil | நறுமண எண்ணெய் |
| Fruiting body | கனி உடலம் |
| Gluten | பசையம் |
| Green manuring | தழை உரம் |
| Kelp | பழுப்பு பாசி |
| Organic agriculture | இயற்கை வேளாண்மை |
| Pelleting | சிற்றுருண்டைகள் ஆக்குதல் |
| Plant pathology | தாவர நோயியல் |
| Pseudo cereal | பொய் தானியம் |
| Pungent | நெடி (அல்லது) காரம் |
| Resin | பிசின் |
| Sapwood | மென்கட்டை |
| Saturated fatty acids | நிறைவுற்ற கொழுப்பு அமிலம் |
| Seed treatment / seed dressing | விதை நேர்த்தி |
| Spawn | பூஞ்சை வித்து |
| Stimulant | தூண்டி |
| Tillering | புல் கிளைத்தல் |
| Unsaturated fatty acids | நிறைவுறா கொழுப்பு அமிலம் |
| Vigour | வீரியம் |
| Volatile oil | எளிதில் ஆவியாகும் எண்ணெய் |

## Competitive Examination Questions

### UNIT VI – Reproduction in plants

1. Which of the following plant reproduces by leaf (DPMT 2003)
   a) *Agave* b) ***Bryophyllum***
   c) *Gladiolus* d) Potato

2. Advantage of cleistogamy (NEET 2013)
   a) Higher genetic variability
   b) More vigorous offspring
   c) **No dependence on pollinators**
   d) Vivipary

3. An example for edible underground stem is (NEET 2014)
   a) Carrot b) Groundnut
   c) Sweet potato d) **Potato**

4. Pollen tablets are available in the market for (NEET 2014)
   a) *invitro* fertilization
   b) Breeding programmes
   c) **supplementing food**
   d) *ex situ* conservation

5. Geitonogamy involves (NEET 2014)
   a) **Fertilization of a flower by pollen from another flower of a same plant**
   b) Fertilization of a flower by pollen of the same flower
   c) Fertilization of a flower by pollen from a flower of another plant in a same population
   d) Fertilization of a flower by the pollen from a flower of another plant belongs to distant population.

6. Which one of the following generates new genetic combinations leading to variations? (NEET 2016)
   a) vegetative reproduction
   b) parthenogenesis
   c) **Sexual reproduction**
   d) Nucellar polyembryony

7. Functional megaspore in angiosperm develops into an (NEET 2017)
   a) endosperm b) **Embryo sac**
   c) embryo d) ovule

8. Which of the statement is not true. (NEET 2016)
   a) Pollen grain of many species cause severe allergies
   b) Stored pollen in liquid nitrogen can be used in crop breeding programmes
   c) **Tapetum helps in the dehiscence of anther**
   d) Exine of pollen grains is made up of sporopollenin

9) When a diploid female plant is crossed with a tetraploid male, the ploidy of endosperm cells in the resulting seed is (AIPMT 2004)
   a) pentaploidy b) diploidy
   c) triploidy d) **tetraploidy**

10) Which one of the following pairs of plant structures has haploid number of chromosomes? (AIPMT 2008)
   a) Egg nucleus and secondary nucleus
   b) Megaspore mother cell and antipodal cells
   c) **Egg cell and and antipodal cells**
   d) Nucellus and antipodal cells

11) The arrangement of nuclei in a normal embryo sac in the dicot plant is (AIPMT 2006)
   a) 2 + 4 + 2 b) **3 + 2 + 3**
   c) 2 + 3 + 3 d) 3 + 3 + 2

12) Wind pollinated flowers are (AIPMT PRE 2010)
   a) Small, producing nectar and dry pollen
   b) small, brightly colored, producing large number of pollen grains
   c) **small, producing large number of pollen grains**
   d) large, producing abundant nectar and pollen

13) Function of filiform apparatus is to (AIPMT 2014)
a) recognize the suitable pollen at stigma
b) stimulate division of generative cell
c) produce nectar
d) **guide the entry of pollen tube**

14) The coconut water from tender coconut represents (NEET 2016)
a) endocarp
b) fleshy mesocarp
c) free nuclear proembryo
d) **free nuclear endosperm**

15) Pollination in water hyacinth and water lily is brought about by the agency of (NEET 2016)
a) **insects or wind** b) birds
c) bats d) water

16) Perisperm differs from endosperm in (NEET 2013)
a) being haploid tissue
b) having no reserve food
c) **being a diploid tissue**
d) its formation by fusion of secondary nucleus with several sperms

17) Male gametes in angiosperms are formed by the division of (AIPMT 2007)
a) microspore mother cell b) microspore
c) **generative cell** d) vegetative cell

18) In a type of apomixes known as adventive polyembryony,embryo develop directly from the (AIPMT 2005)
a) synergids or antipodals in an embryo sac
b) **nucellus or integuments**
c) zygote
d) accessory embryo sac in the ovule

19) In a cereal grain the single cotyledon of the embryo is represented by (AIPMT 2006)
a) coleorhizae b) **scutellum**
c) prophyll d) coleoptiles

20) An ovule which becomes curved so that the nucellus and embryo sac lie at right angles to the funicle is (AIPMT 2004)
a) camylotropous b) anatropous
c) orthotropous d) **hemianatropous**

21) Endosperm is formed during the double fertilization by (AIPMT 2000)
a) **two polar nuclei and one male gamete**
b) one polar nuclei and one male gamete
c) ovum and male gametes
d) two polar nuclei and two male gametes

## UNIT VII – Genetics

1. Genes for cytoplasmic male sterility in plants are generally located in (AIPMT 2005)
a) **Mitrochondrial genome** b) Cytosol
c) Chloroplast genome d) Nuclear genome

2. In which mode of inheritance do you expect more maternal influence among the off spring (AIPMT 2006)
a) Autosomal b) **Cytoplasmic**
c) Y-linked d) X-linked

3. Which one of the following cannot be explained on the basis of Mendel's Law of Dominance? (AIPMT 2010)
a) Factors occur in pairs
b) The discrete unit controlling a particular character is called a factor
c) Out of one pair of factors one is dominant and the other is recessive
**d) Alleles does not show any blending and both the characters recover as such in $F_2$ generation**

4. $F_2$ generation in a Mendelian cross shows that both genotypic and phenotypic ratios are same as 1:2:1. It represents a case of (AIPMT 2012)
**a) Monohybrid crosses with incomplete dominance**
b) Co-dominance c) Dihybrid cross
d) Monohybrid cross with complete dominance

5. A Pleiotropic gene
(AIPMT 2015 – Re-exam)
**a) Controls multiple traits in an individual**
b) Is expressed only in primitive plants
c) Is a gene evolved during Pliocene
d) Controls a trait only in combination with another L gene

6. A true breeding plant is
(NEET Phase II 2016)
**a) Near homozygous and produces offspring of its own kind**
b) Always homozygous recessive in its genetic construction
c) One that is able to breed on its own
d) Produced due to cross pollination among unrelated plants

7. Mendel obtained wrinkled seeds in pea due to the deposition of sugars instead of starch. It was due to which enzyme?
(AIPMT 2001)
a) Amylase b) Invertase c) Diastase
d) **Absence of starch branching enzyme**

8. Ratio of complementary gene is
(AIPMT 2001)
a) 9:3:4 b) 12:3:1 c) 9:3:3:4 d) **9:7**

9. If there are 999 bases in an RNA that codes for a protein with 333 amino acid and the base at position 901 is deleted such that the length of the RNA becomes 998 bases, how many codons will be altered?
(NEET 2017)
a) 1 b) 11 c) 33 d) **333**

10. If a homozygous red flowered plant is crossed with a homozygous white flowered plant, then the off-springs will be
(AIIMS 1999, 2002, 2007)
a) Half-white flowered b) Half-red flowered
c) All white flowered d) **All red flowered**

11. The ratio in a dihyrbid test cross between two individuals is given by (AIIMS 2001)
a) 2:1 b) 1:2:1 c) 3:1 d) **1:1:1:1**

12. Pure line breed refers to
(AIIMS 2002, AIIMS 2007)
a) Heterozygosity only
b) Heterozygosity and linkage
c) **Homozygosity only**
d) Homozygosity and self assortment

13. How many different types of gametes can be formed by $F_1$ progeny, resulting from the following cross AABBCC x aabbcc
(AIIMS 2004)
a) 3 b) **8** c) 27 d) 64

14. Which of the following conditions represents a case of co-dominant genes?
(AIIMS 2009)
a) A gene expresses itself, suppressing the phenotypic effect of its alleles
b) Genes that are similar in phenotypic effect when present separately, but when together interact to produce a different trait
c) Alleles both of which interact to produce a trait which may or may not resemble either of the parental type
**d) Alleles, each of which produces an independent effect in a heterozygous condition.**

15. If 'A' represents the dominant gene and 'a' represents its recessive allele, which of the following would be most likely result in the first generation off spring when Aa is crossed with aa? (AIIMS 2016)
a) All will exhibit dominant phenotype
b) All will exhibit recessive phenotype
c) **Dominant and recessive phenotypes will be 50% each**
d) Dominant phenotype will be 75%

16. In *Pisum Sativum*, there are 14 chromosomes. How many types of homologous pairs can be prepared? (JIPMER 2010)
a) 14 **b) 7** c) $2^{14}$ d) $2^{10}$

17. The year 1900 AD is highly significant for geneticists due to (JIPMER 2013)
a) Discovery of genes
b) Principle of linkage
c) Chromosomal theory of heredity
d) **Rediscovery of Mendelism**

18. The phenotypic ratio of trihybrid cross in $F_2$ generation is (JIPMER 2016)
a) **27:9:9:9:3:3:3:1** b) 9:3:3:1
c) 1:4:6:4:1 d) 27:9:3:3:9:1:2:1

19. In a mutational event when adenine is replaced by guanine, it is the case of (AIPMT 2004)
a) Frameshift mutatin b) Transcription
c) **Transition** d) Transversion

20. Mutations can be induced with (AIPMT 2011)
a) **Gamma radiations** b) Infrared radiations
c) IAA d) Ethylene

21. The mechanism that causes a gene to move from one linkage group to another is called (AIPMT 2015, NEET (Phase – II) 2016)
a) **Translocation** b) Crossing over
c) Inversion d) Duplication

22. A point mutation comprising the substitution of a purine by pyrimidine is called (AIIMS 2002)
a) Transition b) Translocation
c) Deletion d) **Transversion**

23. Frameshift mutation occurs when (AIPMT 2008)
a) Base is substituted
b) **base is deleted or added**
c) Anticodons are absent
d) None of these

24. The distance between two genes in a chromosome is measured in cross-over units which represent (AIIMS 2008)
a) Ratio of crossing over between them
b) **Percentage of crossing over between them**
c) Number of crossing over between them
d) None of these

25. When a cluster of genes show linkage behaviour they (AIPMT 2003)
a) do not show a chromosome map
b) show recombination during meiosis
c) **do not show independent assortment**
d) induce cell division

26. Genetic map is one that (AIPMT 2003)
a) **Establish sites of the genes on a chromosome**
b) Establishes the various stages in gene evolution
c) Shows the stages during the cell division
d) Shows the distribution of various species in a region

27. After a mutation at a genetic locus of the character of an organism changes due to the change in (AIPMT 2004)
a) DNA replication
b) Protein synthesis pattern
c) RNA transcription pattern
d) **Protein structure**

28. In a hexaploidy wheat, the haploid (n) and basic (x) numbers of chromosomes are (AIPMT 2007)
a) **n =21 and x =7** b) n =7 and x =21
c) n =21 and x =21 d) n =21 and x =14

29. Point mutation involves (AIPMT 2009)
a) Deletion b) Insertion
c) **Change in single base pair**
d) duplication

30. Which one of the following is a wrong statement regarding mutations**?** (AIPMT 2012)
a) UV and Gamma rays are mutagens
b) **Change in a single base pair of DNA does not cause mutation**
c) Deletion and insertion of base pairs cause frame shift mutations.
d) Cancer cells commonly show chromosomal aberrations.

31. Which of the following statement is not true of two genes that show 50% recombination frequency? (NEET 2013)
a) The genes may be on different chromosomes
b) **The genes are tightly linked**
c) The genes show independent assortment
d) If the genes are present on the same chromosome, they undergo more than one crossover in every meiosis.

32. Haploids are more suitable for mutation studies than the diploids. This is because (AIPMT 2008)
a) **All mutations, whether dominant or recessive are expressed in haploids**
b) Haploids are reproductively more stable than diploids
c) Mutagens penetrate in haploids more effectively than diploids
d) Haploids are more abundant in nature than diploids

33. Crossing over that results in genetic recombination in higher organisms occurs between (AIPMT 2004)
a) **Non-sister chromatids of a bivalent**
b) Two daughter nuclei
c) Two different bivalents
d) Sister chromatids of bivalents

34. Removal of introns and joining the exons in a defined order in a transcription unit is called (AIPMT 2009, AIPMT Pre 2012)
a) Tailing b) Transformation
c) Capping d) **Splicing**

35. Selection the correct option (AIPMT 2014)\

| | **Direction of RNA synthesis** | **Direction of reading of the template DNA strand** |
|---|---|---|
| **a)** | **5' – 3'** | **3' – 5'** |
| b) | 3' – 5' | 5' – 3' |
| c) | 5' – 3' | 5' – 3' |
| d) | 3' – 5' | 3 ' – 5' |

36. Peptide synthesis inside a cell takes place in (AIPMT 2011)
a) **Ribosomes** b) Chloroplast
c) Mitrochondria d) Chloroplast

37. During protein synthesis in a organism at one point the process comes to a halt. Select the group of the three codons from the following from which any one of the three could bring about this halt. (AIIMS 2006)
a) UUU, UCC, UAU b) UUUC, UUA, UAC
c) **UAG, UGA, UAA** d) UUG, UCA, UCG

38. The binding site of tRNA with mRNA and amino acids respectively are (AIIMS 2009)
a) mRNA with DHU loop and amino acid with CCA end
b) mRNA with CCA end and amino acid with anticodon loop
c) mRNA with anticodon loop and amino acid with DHU loop
d) **mRNA with anticodon loop and amino acid with CCA end**

39. Which of the following is correct regarding genetic code? (AIIMS 2010)
a) UUU is the initiation codon which also codes for phenylalanine
b) **There are 64 triplet codons and only 20 amino acids**
c) Three random nitrogen bases specify the placement of one amino acid
d) UAA is the nonsense codon which also codes for methionine

40. Which of the following set of options is used in translation? (AIIMS 2015)
a) hnRNA, tRNA, rRNA
b) **mRNA, tRNA, rRNA**
c) mRNA, tRNA, hnRNA
d) hnRNA, rRNA, lRNA

41. Sequence of DNA (non-coding) is known as (JIPMER 2006)
a) exon b) **intron**
b) cistron d) none of these

42. During transcription holoenzyme RNA polymerase binds to a DNA sequence and the DNA assumes a saddle like structure at that point. What is that sequence called (JIPMER 2007)

a) CAAT box b) GGTT box
c) AAAT box d) **TATA box**

43. The successive nucleotides of RNA are covalently linked through (JIPMER 2001)

a) Hydrogen bonds
b) **Phosphodiester bonds**
c) Glycosidic bonds d) None of these

44. The Okazaki fragments in DNA chain growth (AIPMT 2007, JIPMER 2004)

a) Polymerize in the 3' - to 5' direction and forms replication fork
b) Prove semi conservative nature of DNA replication
c) **Polymerize in the 5' to 3' direction and explains 3' – to – 5' DNA replication**
d) Result in transcription

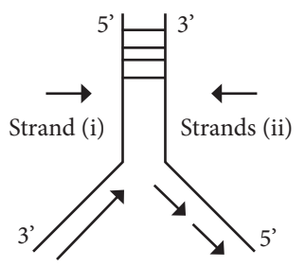
45. Taylor conducted the experiment to prove semiconservative mode of chromosome replication on (NEET (Phase II) 2016)

a) Drosophila melanogaster b) e-coli
c) Vinca rosea d) **vicia faba**

46. The new strand synthesized in small pieces and then joined together during DNA replication is called (AIIMS 1994)

a) Dead strand b) **Lagging strand**
c) Leading strand d) All of these

47. What is incorrect about the following figure representing DNA replication (AIIMS 2009)




a) The direction of DNA replication in strand (i)
b) The direction of DNA replication in strand (ii)
c) **Discontinuous replication of strand (i)**
d) Discontinuous replication of strand (ii)

48. DNA multiplication is called (JIPMER 2009)

a) Translation b) **Replication**
c) Transduction d) Transcription

49. The complete set of chromosome inherited as a single unit from one parent is known as (AIIMS 1994)

a) **Genome** b) Linkage
c) Gene pool d) Genotype

50. The mobile genetic element is (JIPMER 2014)

a) **Transposon** b) Mutation
c) Endonuclease d) Variation

## UNIT VIII – Biotechnology

1. What is the criterion for DNA fragments movement on agarose gel during gel electrophoresis? (NEET 2017)

a) **The smaller the fragment size, the farther it moves.**
b) Positively charged fragments move to farther end.
c) Negatively charged fragments do not move.
d) The larger the fragment size, the farther it moves.

2. Stirred-tank bioreactors have been designed for (NEET – II 2016)

a) Purification of product.
b) Addition of preservatives to the product
c) **Availability of oxygen throughout the process**
d) Ensuring anaerobic conditions in the culture vessel.

3. Which of the following is not a component of downstream processing? (NEET-II 2016)

a) Separation b) Purification
c) Preservation d) **Expression**

4. Which of the following is not a feature of the plasmids? (NEET-I 2016)
a) Transferable **b) Single-stranded**
c) Independent replication
d) Circular structure

5. Which of the following is not required for nay of the techniques of DNA fingerprinting available at present? (NEET-I 2016)
a) Restriction enzymes
b) DNA-DNA hybridization
c) Polymerase chain reaction
**d) Zinc finger analysis**

6. Which vector can clone only a small fragment of DNA? (AIPMT 2014)
a) Bacterial artificial chromosome
b) Yeast artificial chromosome
**c) Plasmid** d) Cosmid

7. The colonies of recombinant bacteria appear white in contrast to blue colonies of non-recombinant bacteria because of (NEET 2013)
a) Insertional inactivation of alpha galactosidase in recombinant bacteria.
b) Inactivation of glycosidase enzyme in recombinant bacteria.
c) N**on-recombinant bacteria containing beta galactosidase.**
d) Insertional inactivation of alpha galactosidase in non-recombinant bacteria.

8. During the process of isolation of DNA, chilled ethanol is added to (Karnataka NEET 2013)
a) **Precipitate DNA**
b) Break open the cell to release DNA
c) Facilitate action of restriction enzymes
d) Remove proteins such as histones.

9. For transformation, micro-particles coated with DNA to be bombarded with gene gun are made up of (AIPMT 2012)
a) Silver or platinum b) Platinum or zinc
c) Silicon or platinum **d) Gold or tungsten.**

10. Biolistics (gene-gun) is suitable for (AIPMT Mains 2012)
a) disarming pathogen vectors
**b) transformation of plant cells**
c) constructing recombinant DNA by joining with vectors
d) DNA fingerprinting.

11. Genetic engineering is possible because (CBSE 1998)
a) phenomenon of transduction in bacteria understood
b) we can see DNA by electron microscope
c) we can cut DNA at specific sites by endonuclease like DNAase I
**d) restriction endonuclease purified from bacteria can be used invitro**

12. Genetic Engineering is (BHU 2003)
a) Making artificial genes
b) **Hybridisation of DNA of one organism to that of the others**
c) Production of alcohol by using microorganisms
d) Making artificial limbs, diagnostic instruments such as ECG, EFG, etc.

13. Ligase is used for (AMU 2006)
a) **Joining of two DNA fragments**
b) Separating DNA
c) DNA polymerase reaction
d) All of these

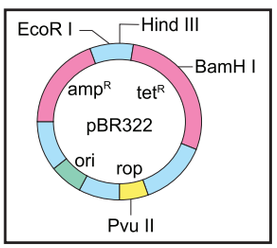
14. In genetic engineering, gene of interest is transferred to the host cell through a vector. Consider the following four agents (1-4) in this regard and select the correct option about which one or more of these can be used as vectors
1. A bacterium 2. Plasmid
3. Plasmodium 4. Bacteriophage
(AIPMT Main 2010)
a) 1 and 4 only b) **2 and 4 only**
c) 1 only d) 1 and 3 only

15. Given below is a sample of a portion of DNA strand giving the base sequence on the opposite strands. What is so special shown in it? (AIPMT 2014)
5'---GAATTC---3' 3'---CTTAAG---5'

a) **Palindromic sequence of base pairs**
b) Replication completed
c) Deletion mutation
d) Start codon at the 5'end

16. There is a restriction endonuclease called EcoRI. What does "co" part in it stand for ? (AIPMT 2011)
a) Coelom b) Colon
c) **Coli** d) Coenzyme

17. The figure below is the diagrammatic representation of the vector pBR322. Which one of the given options correctly identifies its certain components? (AIPMT 2012)




a) Ori-original restriction enzyme
b) rop-reduced osmotic pressure
c) Hind III, EcoRI – selectable markers
d) **ampR, tetR – antibiotic resistance genes**

18. A mixture containing DNA fragments a,b,c,d with molecular weights of a+b=c, a>b and d>c, was subjected to agarose gel electrophoresis. The position of these fragmets from cathode to anode sides of the gel would be (DPMT 2010)
a) **b,a,c,d** b) a,b,c,d
c) c,b,a,d d) b,a,d,c

19. An analysis of chromosomal DNA using the southern hybridisation technique does not use (AIPMT 2014)
a) Electrophoresis
b) Blotting
c) Autoradiography
d) **PCR**

20. The colonies of recombinant bacteria appear white in contrast to blue colonies of non- recombinant bacteria because of (NEET 2013)
a) Non-recombinant bacteria containing beta galactosidase
b) Insertional inactivation of a-galactosidase in non-recombinant bacteria
c) **Insertional inactivation of b-galactosidase in recombinant bacteria**
d) Inactivation of glycosidase enzyme in recombinant bacteria

21. Which one of the following palindromic base sequence in DNA can be easily cut at about the middle by some particular restriction enzyme? (AIPMT 2010)
a) 5'CGTTCG3' 3'ATCGTA 5'
b) 5' GATATG 3' 3' CTACTA 5'
c) **5' GAATTC 3' 3' CTTAAG 5'**
d) 5' CACGTA 3' 3' CTCAGT 5'

22. Silencing of mRNA has been used in producing transgenic plants resistant to (AIPMT, 2011)
a) Boll worms b) **Nematodes**
c) White rusts d) Bacterial blights

23. Some of the characteristics of Bt cotton are (AIPMT,2010)
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 boll worms**

24. An improved variety of transgenic basmati rice (AIPMT,2010)
a) Does not require chemical fertilisers and growth hormones
b) **Gives high yield and is rich in vitamin A**

c) Is completely resistant to all insect pests and diseases of paddy
d) Gives high yield but no characteristic aroma

25) Consumption of which one of the following foods prevent the kind of blindness associated with vitamin A deficiency? (AIPMT 2012)

a) Flavr Savr b) Canola
c) **Golden rice** d) Bt brinjal

26. A protoplast is a cell (NEET 2016)
a) undergoing division
**b)without cell wall**
c) without plasma membrane
d) without nucleus.

27. A technique of micropropagation is (NEET 2015)
a) Protoplast fusion
b) embryo rescue
c) somatic hybridization
**d) somatic embryogenesis**

28. To obtain virus-free healthy plants from a diseased one by tissue culture technique, which part/parts of the diseased plant will be taken? (AIPMT 2014)
a) Apical meristem only
b) Palisade parenchyma
c) **Both apical and axillary meristems**
d) Epidermis only.

29. Cellular totipotency was demonstrated by (AIPMT 1991)
a) Theodore Schwann
b) A.V. Leeuwenhoek
**c) F.C. Steward**
d) Robert Hooke

30. Tissue culture technique can produce infinite number of new plants from a small parental tissue. The economic importance of the technique is raising. (Karnataka NEET 2013)
a) **genetically uniform population identical to the original parent.**
b) homozygous diploid plants
c) new species
d) variants through picking up somaclonal variations

31. Which of the following statements is not true about somatic embryogenesis? (Karnataka NEET 2013).
a. The pattern of development of a somatic embryo is comparable to that of a zygotic embryo.
b) **Somatic embryos can develop from microspores.**
c) Somatic embryo is induced usually by an auxin such as 2, 4-D.
d) A somatic embryo develops from a somatic cell.

32. Which one of the following is a case of wrong matching? (AIPMT 2012)
a) Somatic - Fusion of two diverse hybridization cells
**b) Vector DNA - Site for tRNA synthesis**
c) Micropropagation - *in vitro* production of plants in large numbers
d) Callus - Unorganised mass of cells produced in tissue culture.

33. Polyethylene glycol method is used for (AIPMT 2010)
a) biodiesel production
b) seedless fruit production
c) energy production from sewage
**d) gene transfer without a vector.**

34. Somaclones are obtained by (AIPMT 2009)
a) Plant breeding
b) Irradiation
c) genetic engineering
**d) tissue culture.**

35. The technique of obtaining large number of plantlets by tissue culture method is called
a) Plantlet culture ( AIPMT 2005)
b) Organ culture
**c) Micropropagation**
d) Macropropagation

36. Coconut milk is used in tissue culture in which present ( AIPMT 2000)
**a) cytokinin** b) auxin
c) gibberellins d) ethylene.

37. Haploid plants can be obtained by culturing. ( AIPMT 1994)
**a) pollen grains** b) root tips
c) young leaves d) endosperm.

## UNIT IX - Plant Ecology

1. Plants which produce characteristic pneumatophores and show vivipary belong to (NEET 2017)
a) **Halophytes** b) psammophytes
c) hydrophytes d) mesophytes

2. Mycorrhizae are the example of (NEET I 2017)
a) amensalism b) antibiosis
c) **mutualism** d) fungistatis

3. If '+' sign is assigned to beneficial interaction, '-' sign to detrimental and '0' sign to neutral interaction, then the population interaction represented by '+' '-' refers to (NEET 2016)
a) mutualism b) amensalism
c) commensalism d) **parasitism**

4. Which of the following is correctly matched? (NEET Phase 2 – 2016)
a) Aerenchyma - *Opuntia*
b) Age pyramid - Biome
c) ***Parthenium hysterophorus*** - **Threat to biodiversity**
d) Stratification - Population

5. An association of individuals of different species living in the same habitat and having functional interactions is (Re-AIPMT 2015)
a) Population b) Ecological niche
c) **Biotic community** d) Ecosystem

6. Roots play in significant role in absorption of water in (Re-AIPMT 2015)
a) Wheat b) Sunflower
c) ***Pistia*** d) Pea

7. If we uncover half of the forest covering the earth, what crisis will be produced at most and the first? (AIPMT 1996)
**a. Some species will be extinct**
b. Population and ecological imbalance will rise up
c. Energy crisis will occur
d. Rest half forests will maintain this imbalance.

8. Most animals are tree dwellers in a (AIPMT 2015)
a) **Tropical rain forest**
b)Coniferous forest
c) Thorn woodland
d) Temperate deciduous fo

9. *Cuscuta* is an example of (AIPMT Mains 2012)
a) **Ectoparasitism** b) Brood parasitism
c) Predation d) Endoparasitism

10. Large woody vines are more commonly found in (AIPMT Prelims 2011)
a) Alphine forests
b) Temperate forests
c) Mangroves
d) **Tropical rain forests**

11. Niche overlap indicates (AIPMT Prelims 2006)
a) Active co-operation between two species
b) Two different parasites on the same host
c) **Sharing of one or more resources between the two species**
d) Mutualism between two species

12. Which one of the following pairs is **mismatched**? (AIPMT Prelims 2005)
    a) Savanna – Acacia trees
    b) **Prairie – Epiphytes**
    c) Tundra – Permafrost
    d) Coniferous forest – Evergreen trees

13. Which ecosystem has the maximum biomass? (NEET 2017)
    a) Grassland ecosystem
    b) Pond ecosystem
    c) Lake ecosystem
    d) **Forest ecosystem**

14. Which of the following would appear as the pioneer organisms on bare rocks? (NEET 2016)
    a) Mosses b) Green algae
    c) **Lichens** d) Liverworts

15. In which of the following both pairs have correct combination? (NEET 2015)

| | | |
|---|---|---|
| a) | Gaseous nutrient cycle<br>Sedimentary nutrient cycle | Nitrogen and Sulphur<br>Carbon and Phosphorous |
| b) | Gaseous nutrient cycle<br>Sedimentary nutrient cycle | Sulphur and Phosphorous<br>Carbon and Nitrogen |
| c) | **Gaseous nutrient cycle<br>Sedimentary nutrient cycle** | **Carbon and Nitrogen<br>Sulphur and Phosphorous** |
| d) | Gaseous nutrient cycle<br>Sedimentary nutrient cycle | Carbon and Sulphur<br>Nitrogen and Phosphorous |

16. Secondary succession takes place on / in (NEET 2015 cancelled)
    a) newly created pond b) newly cooled lava
    c) bare rock d) **degraded forest**

17. In an ecosystem the rate of production of organic matter during photosynthesis is termed as (NEET 2015 cancelled)
    a) Secondary productivity
    b) net productivity
    c) Net primary productivity
    d) **gross primary productivity**

18. Natural reservoir of phosphorous is (NEET 2013)
    a) **rock** b) fossils
    c) sea water d) animal bones

19. Secondary productivity is rate of formation of new organic matter by (NEET 2013)
    a) **consumers** b) decomposers
    c) producers d) parasites

20. Which one of the following processes during decomposition is correctly described? (NEET 2013)
    a) Catabolism – Last step in the decomposition under fully anaerobic condition
    b) Leaching – Water soluble inorganic nutrient rise to the top layers of soil
    c) **Fragmentation – Carried out by organisms such as earthworms.**
    d) Humification – Leads to the accumulative of a dark coloured substance humus which undergoes microbial action in a very fast rate.

21. Which one of the following is not a functional unit of an ecosystem? (AIPMT 2012)
    a) Energy flow b) decomposition
    c) Productivity d) **stratification**

22. The upright pyramid of number is absent in (AIPMT 2012)
    a) Pond b) **forest**
    c) lake d) grassland

23. The rate of formation of new organic matter by rabbit in a grassland is called (Mains 2012)
    a) net productivity
    b) **secondary productivity**
    c) net primary productivity
    d) gross primary productivity

24. The second stage of hydrosere is occupied by plants like (Mains 2012)
a) *Azolla* b) *Typha*
c) *Salix* d) ***Vallisneria***

25. Which one of the following is a characteristic feature of cropland ecosystem? (NEET 2016)
a) Ecological succession
b) Absence of soil organisms
c) **Least genetic diversity**
d) Absence of weeds

26. Most animals that live in deep oceanic waters are (Re-AIPMT 2015)
a) **Detritivores**
b) Primary consumers
c) Secondary consumers
d) Tertiary consumers

27. During ecological succession (Re-AIPMT 2015)
a) The changes lead to a community that is in near equilibrium with the environment and is called pioneer community.
b) **The gradual and predictable change in species composition occurs in a given area**.
c) The establishment of a new biotic community is very fast in its primary phase.
d) The number and types of animals remain constant.

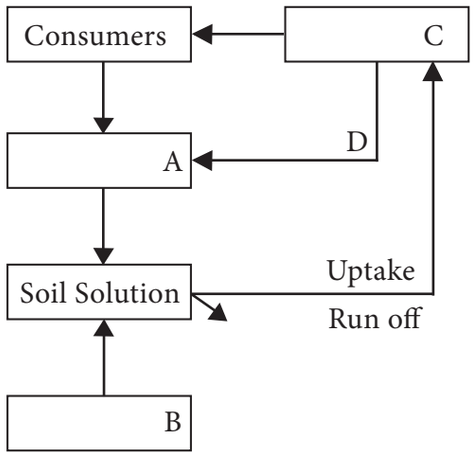
28. The mass of living material at a trophic level at a particular time is called (AIPMT 2015)
a) **Standing crop**
b) Gross primary productivity
c) Standing state
d) Net primary productivity

29. Match the following and select the **correct** option (AIPMT 2014)

| **Column I** | **Column II** |
|---|---|
| (I) Earthworm | (i) pioneer species |
| (II) Succession | (ii) Detritivore |
| (III) Ecosystem service | (iii) Natality |
| (IV) Population growth | (iv) Pollination |

| | I | II | III | IV |
|---|---|---|---|---|
| a) | i | ii | iii | iv |
| b) | iv | i | iii | ii |
| c) | iii | ii | iv | i |
| d) | **ii** | **i** | **iv** | **iii** |

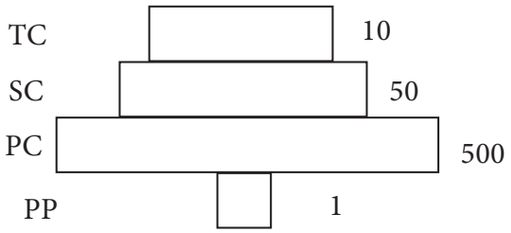
30. Given below is a simplified model of phosphorous cycling in a terrestrial ecosystem with four blanks (A – D. Identify the blanks. (AIPMT 2014)




| | A | B | C | D |
|---|---|---|---|---|
| a) | Rock minerals | Detritus | Litter fall | Producers |
| b) | Litter fall | Producers | Rock minerals | Detritus |
| c) | **Detritus** | **Rock minerals** | **Producers** | **Litter fall** |
| d) | Producers | Litter fall | Rock minerals | Detritus |

31. If 20 J of energy is trapped at producer level, then how much energy will be available to peacock as food in the following chain? (AIPMT 2014)
Plant → Mice → Snake → Peacock
a) **0.02 J** b) 0.002 J
c) 0.2 J d) 0.0002 J

32. Given below is an imaginary pyramid of numbers. What could be one of the possibilities about certain organisms at some of the different levels ? (AIPMT Prelims 2012)




a) Level one PP is 'pipal trees' and the level SC is 'sheep'.

b) Level PC is 'rats' and level SC is 'cats'

c) **Level PC is 'insects' and level SC is 'small insectivorous birds'**

d) Level PP is 'phytoplanktons' in sea and 'whale' on top level TC

33. Which one of the following statements for pyramid of energy is incorrect, whereas the remaining three are correct? (AIPMT Prelims 2011)

a) It is upright in shape

b) Its base is broad

c) It shows energy content of different trophic level organisms

d) **It is inverted in shape**

34. Which one of the following animals may occupy more than one trophic levels in the same ecosystem at the same time? (AIPMT Mains 2011)

a) Goat b) Frog

c) **Sparrow** d) Lion

35. Both hydrarch and xerarch successions lead to (AIPMT Mains 2011)

a) Highly dry conditions

b) Excessive wet conditions

c) **Medium water conditions**

d) Xeric conditions

36. Of the total incident solar radiation the proportion of PAR is (AIPMT Prelims 2011)

a) More than 80% b) About 70%

c) About 60% d) **Less than 50%**

37. The breakdown of detritus into smaller particles by earthworm is a process called (AIPMT Mains 2011)

a) Mineralisation b) Catabolism

c) Humification d) **Fragmentation**

38. The biomass available for consumption by the herbivores and the decomposers is called (AIPMT Prelims 2010)

a) Gross primary productivity

b) **Net primary productivity**

c) Secondary productivity

d) Standing crop

39. The correct sequence of plants in a hydrosere is (AIPMT Prelims 2009)

a) ***Volvox*** → ***Hydrilla*** → ***Pistia*** → ***Scirpus*** → ***Lantana*** → **Oak**

b) *Pistia*→*Volvox*→*Scirpus*→*Hydrilla*→Oak → *Lantana*

c) Oak→*Lantana*→*Volvox*→*Hydrilla*→*Pistia* →*Scirpus*

d) Oak→*Lantana*→*Scirpus*→*Pistia*→*Hydrilla* →*Volvox*

40. About 70% of the total global carbon is found in (AIPMT Prelims 2008)

a) Forests b) Grasslands

c) Agro ecosystems d) **Oceans**

41. Consider the following statements concerning food chains

i) Removal of 80% tigers from an area resulted in greatly increased growth of vegetation.

ii) Removal of most of the carnivores resulted in an increased population of deers.

iii) The length of food chains is generally limited to 3 – 4 trophic levels due to energy loss.

iv) The length of food chains may vary from 2 to 8 trophic levels.

Which two of the above statements are correct? (AIPMT Prelims 2008)

a) i and ii b) **ii and iii**

c) iii and iv d) i and iv

42. Which one of the following is not used for construction of ecological pyramids?
(AIPMT Prelims 2006)
a) Dry weight
2) Number of individuals
c) Rate of energy flow
4) **Fresh weight**

43. The UN Conference of Parties on climate change in the year 2012 was held at (NEET 2015)
a. Lima b. Warsaw
c. Durban **d. Doha.**

44. Which of the following are most suitable indicators of $SO_2$ pollution in the environment? ( NEET 2015)
a. Algae b. Fungi
**c. Lichens** d. Conifers

45. Which of the following is not one of the prime health risks associated with greater UV radiations through the atmosphere due to depletion of stratospheric ozone? (NEET 2015)
a. Damage to eyes
**b. Increased liver cancer**
c. Increased skin cancerd.
d. Reduced Immune system

46. A location with luxuriant growth of lichens on the trees indicates that the
(AIPMT 2014)
a. trees are very healthy
b. trees are heavily infested
c. location is highly polluted
**d. location is not polluted.**

47. The ozone of atmosphere in which the ozone layer is present is called
(AIPMT 2014)
a. ionosphere b. mesosphere
**c. stratosphere** d. troposphere

48. Which one of the following is a wrong statement? (AIPMT 2012)
a. Most of the forests have been lost in tropical areas.
b**. Ozone in upper part of atmosphere is harmful to animals.**
c.Greenhouse effect is a natural phenomenon.
d. Eutrophication is a natural phenomenon in freshwater bodies.

49. Good ozone is found in the (Mains 2011)
a. mesosphere b.troposphere
**c. stratosphere** d. ionosphere

50. Chipko movement was launched for the protection of (AIPMT 2009)
a. **forests** b. livestock
c.wetlands d.grasslands

51. Identify the correctly matched pair.
(AIPMT 2005)
a. Basal convention - Biodiversity conservation
**b.Kyoto protocol** **-Climatic change**
c. Montreal protocol -Global warming
d. Ramsar convention -Ground water pollution

52. Common indicator organism of water pollution is (AIPMT 2004)
a. *Lemna pancicostata*
b. *Eichhornia crassipes*
**c. *Escherichia coli***
d. *Entamoeba histolytica*

53. Which country has the greatest contribution for the hole formation in ozone layer? (AIPMT 1996)
**a. Russia** b. Japan
c. USA d Germany

## UNIT X - Economic Botany

1. The name of Dr. Norman Borlaug is associated with (JIPMER 2007)

   a) **Green revolution**
   b) Yellow revolution
   c) White revolution
   d) Blue revolution

2. Which of the following is generally used for induced mutageneis in crop plants (JIPMER 2007)

   a) Alpha b) X-ray
   c) UV ray d) **Gamma ray**

3. A man-made allopolyploid cereal crop is (OJEE 2010)

   a) *Hordeum vulgare* **b) *Triticale***
   c) *Raphanus brassica* d) *Zee mays*

4. Objective of plant breeding is (MP PMT 2001)

   a) better yield
   b) better quality
   c) disease / stress resistance
   **d) All of the above**

5. Selection is a method of (MP Pmet 2001)

   a) cytology b) plant phycology
   **c) plant breeding** d) genetics

6. Green revolution in India occurred during ( AIPMT 2012)

   **a) 1960's** b) 1970's
   c) 1980's d) 1950's

7. Jaya and ratna developed for green revolution in India are the varieties of (AIPMT 2011)

   a) maize **b) rice**
   c) sugarcane d) wheat.

8. First man-made cereal triticale is (HPMT 2008)

   a) Octaploid **b) hexaploid**
   c) Both a & b d) diploid

9. In plant breeding programmes, the entire collection (of plants / seeds) having all the diverse alleles for all genes in a given crop is called (NEET 2013)

   a) cross hybridization among the selected parents
   b) evaluation is selection of parents
   c) **germplasm collection**
   d) selection of superior recombinants

10. An example for semi dwarf variety of wheat is (HPPMT 2012)

    a) IR 8 b) **Sonalika**
    c) *Triticum* d) *Saccharum*

11. Himgiri developed by hybridization is selection for disease resistance against rust pathogen is a variety of (AIPMT 2011)

    a) Chilli b) Maize
    c) Sugarcane d) **Wheat**

12. Breeding of crops with high levels of minerals, vitamins and proteins is called (CBSE AIPMT 2010)

    a) somatic hybridization
    b) **biofortification**
    c) bio magnification
    d) micro propagation

13. The reason for vegetatively reproducing crop plants to suit for maintaining hybrid vigour is that (AIPMT 1998)

    a) they are more resistant to disease
    b) **once a desired hybrid produced, no chances of losing it**
    c) they can be easily propagated
    d) they have a longer life span.

14. Wonder wheat is a new wheat variety developed by (AIIMS 2009)

    a) **Mexico's International Wheat and Maize improvement centre**
    b) Indian National Botanical Research Institute
    c) Australian crop Improvement centre
    d) African Crop Improvement centre