



## MCQs for Higher Studies

### Chapter 1 - Reproduction in Organisms

1. "Nothing lives forever, but life continues". What does it mean? [AIPMT 1995]  
**a) Older dies but new ones are produced by reproduction**  
b) Nothing can produce without death  
c) Death has nothing to do with the continuation of life  
d) Parthenogenesis is must for sexual reproduction
2. A few statements describing certain features of reproduction are given below. Select the options that are true for both sexual and asexual reproduction from the options given:  
i. Gametic fusion takes place  
ii. Transfer of genetic material takes place  
iii. Reduction division takes place  
iv. Progeny have some resemblance with parents  
a) i and ii                      b) ii and iii  
**c) ii and iv**                      d) i and ii
3. A few statements with regard to sexual reproduction are given below:  
i. Sexual reproduction does not always require two individuals  
ii. Sexual reproduction generally involves gametic fusion  
iii. Meiosis never occurs during sexual reproduction  
iv. External fertilization is a rule during sexual reproduction  
Choose the correct statements from the options below:  
a) i and iv                      b) i and iii  
c) ii and iii                      **d) i and iv**
4. Given below are a few statements related to external fertilization. Choose the correct statements:  
i. The male and female gametes are formed and released simultaneously  
ii. Only a few gametes are released into the medium  
iii. Water is the medium in a majority of organisms exhibiting external fertilization  
iv. Offspring formed as a result of external fertilization have better chance of survival than those formed inside the organism  
a) iii and iv                      **b) i and iii**  
c) ii and iv                      d) i and iv
5. Which of the following statements, support the view that elaborate sexual reproductive process develops much later in the organic evolution?  
i) Lower groups of organisms have simpler body design  
ii) Asexual reproduction is common in lower groups  
iii) Asexual reproduction is common in higher groups of organisms  
iv) The high incidence of sexual reproduction is in angiosperms and vertebrates.  
a) i, ii and iii                      b) i, iii and iv  
**c) i, ii, and iv**                      d) ii, iii and iv

### Chapter 2 - Human Reproduction

1. Select the incorrect statement. [NEET 2016, phase I]  
a) LH and FSH trigger ovulation in ovary  
**b) LH and FSH decrease gradually during the follicular phase**  
c) LH triggers secretion of androgens from the Leydig cells.  
d) FSH stimulates the sertoli cells which help in spermiogenesis
2. Identify the correct statement on 'inhibitin' [NEET 2016, phase I]  
**a) is produced by granulose cells in ovary and inhibits the secretion of FSH**  
b) is produced by granulose cells in ovary and inhibits the secretion of LH  
c) is produced by nurse cells in testes and inhibits the secretion of LH  
d) inhibits the secretion of LH, FSH and prolactin.
3. Several hormones like hCG, hPL, oestrogen and progesterone are produced by [NEET 2016, phase I]  
a) ovary                                      **b) placenta**  
c) fallopian tube                      d) pituitary
4. Match column I with column II and select the correct option using the codes given below

[NEET 2016, phase I]

Column I	Column II
A. Mons pubis	1. Embryo formation
B. Antrum	2. Sperm
C. Trophoctoderm	3. Female external genitalia
D. Nebenkem	4. Graafian follicle

- |           |          |          |          |          |
|-----------|----------|----------|----------|----------|
|           | A        | B        | C        | D        |
| a)        | 3        | 4        | 2        | 1        |
| <b>b)</b> | <b>3</b> | <b>4</b> | <b>1</b> | <b>2</b> |
| c)        | 3        | 1        | 4        | 2        |
| d)        | 1        | 4        | 3        | 2        |
5. Which one of the following is not the function of placenta? (NEET, 2013)  
a) To facilitate supply of oxygen and nutrients to embryo  
b) To secrete oestrogen  
c) To facilitate the removal of carbondioxide and material from embryo  
**d) To secrete oxytocin during parturition**
  6. The testes in human are situated outside the abdominal cavity inside a pouch called scrotum. The purpose served is for [AIPMT 2011]  
a) escaping any possible compression by the visceral organs.  
b) providing more space for the growth of epididymis.  
c) providing a secondary sexual feature for exhibiting the male sex  
**d) maintaining the scrotal temperature lower than internal body temperature**
  7. Hormones secreted by placenta to maintain pregnancy are [NEET, 2018]  
a) hCG, hPL, progesterone, estrogen  
**b) hCG, hPL, estrogen, relaxin, oxytocin**



- c) hCG, hPL, progesterone, prolactin  
d) hCG, progesterone, estrogen, glucocorticoids
8. Match and select the correct option [NEET, 2018]

Column I	Column II
a. Proliferative phase	1. Breakdown of endometrium lining
b. Secretory phase	2. Follicular phase
c. Menstruation	3. Luteal phase

- a    b    c  
A) 3   2   1  
B) 2   3   1  
C) 1   3   2  
D) 3   1   2

### Chapter 3 - Reproductive Health

1. Which of the following is a hormone releasing Intrauterine Device (IUD)? [AIPMT 2014]  
a) Multiload 375                      b) LNG-20  
c) Cervical cap                      d) Vault
2. Assisted reproductive technology, IVF involves the transfer of [AIPMT 2014]  
a) Ovum into the fallopian tube  
b) **Zygote into the fallopian tube**  
c) Zygote into the uterus  
d) Embryo with 16 blastomeres into the fallopian tube
3. In context of amniocentesis, which of the following statements is incorrect? [NEET-I, 2016]  
a) It is usually done when a woman is between 14-16 weeks pregnant  
b) It is used for prenatal sex determination  
c) It can be used for detection of Down syndrome  
d) **It can be used for detection of Cleft palate**
4. Which of the following approach does not give the defined action of contraceptive? [NEET-I, 2016]

a) Barrier methods	Prevent fertilization
b) Intra uterine devices	Increases phagocytosis of sperms, suppresses sperm motility and fertilizing capacity of sperms
c) Hormonal contraceptives	Prevent retard entry of sperms, prevent ovulation and fertilization
d) Vasectomy	<b>Prevents spermatogenesis</b>

### Chapter 4 - Principle of Inheritance and Variation

1. The fruit fly *Drosophila melanogaster* was found to be very suitable for experimental verification of chromosomal theory of inheritance by Morgan and his colleagues because [AIPMT MAINS 2010]  
a) It reproduces parthenogenetically  
b) A single mating produces two young flies  
c) Smaller female is easily recognizable from large male  
d) **It completes the life cycle in about two weeks**
2. Which one of the following cannot be explained on the basis of Mendel's Law of Dominance? [AIPMT PRE 2010]  
a) The discrete unit controlling a particular character is called a factor

- b) Out of one pair factors one is dominant and the other recessive

c) **Alleles do not show any blending and both the characters recover as such in F<sub>2</sub> generation**

d) Factors occur in pairs

3. ABO blood groups in humans are controlled by the gene I. It has three alleles – I<sup>A</sup>, I<sup>B</sup> and i. Since there are three different alleles, six different genotypes are possible. How many phenotypes can occur?

[AIPMT PRE 2010]

a) Three    b) One    c) **Four**    d) Two

4. Which one of the following symbols and its representation, used in human pedigree analysis is correct? [AIPMT PRE 2010]

a)  $\square=\circ$ =**Mating between relatives**

b)  $\circ$ =Unaffected male

c)  $\square$ =Unaffected female

d)  $\diamond$ =Male affected

5. Which one of the following conditions correctly describes the manner of determining the sex in the given example? [AIPMT PRE 2011]

a) **XO type of sex chromosomes determine male sex in grasshopper**

b) XO condition in humans as found in Turner syndrome, determines female sex

c) Homozygous sex chromosomes (XX) produce male in *Drosophila*

d) Homozygous sex chromosomes (ZZ) determine female sex in birds

6. A normal-visioned man whose father was blind, marries a woman whose father was also colour blind. They have their first child as a daughter. What are the chances that this child would be colour blind? [AIPMT PRE 2012]

a) 100%    b) **0%**    c) 25%    d) 50%

7. Which of the following statements is not true of two genes that show 50 per cent recombination frequency [AIPMT 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

8. A pleiotropic gene: [RE-AIPMT 2015]

a) Is a gene evolved during Pliocene

b) Controls a trait only in combination with another gene

c) **Controls multiple traits in an individual**

d) Is expressed only in primitive plants

9. A gene showing codominance has: [RE-AIPMT 2015]

a) Alleles tightly linked on the same chromosome

b) Alleles that are recessive to each other

c) **Both alleles independently expressed in the heterozygote**

d) One allele dominant on the other

10. Pick out the correct statements: [NEET-I, 2016]

a) Haemophilia is a sex-linked recessive disease

b) Down's syndrome is due to aneuploidy

c) Phenylketonuria is an autosomal recessive gene disorder

d) Sickle cell anaemia is an X-linked recessive gene disorder



- a) A and D are correct      b) B and D are correct  
c) A, C and D are correct    d) **A, B and C are correct**

### Chapter 5 - Molecular Genetics

- The association of histone H1 with a nucleosome indicates (NEET 2017)  
a) Transcription is occurring  
b) DNA replication is occurring  
c) **The DNA is condensed into chromatin fibre**  
d) The DNA double helix is exposed
- Which of the following is not required for any of the techniques of DNA fingerprinting available at present? [NEET 2016]  
a) **Zinc finger analysis**  
b) Restriction enzymes  
c) DNA-DNA hybridization  
d) polymerase chain reaction
- Satellite DNA is important because it [AIPMT 2015]  
a) codes for proteins needs in cell cycle  
b) **shows high degree of polymorphism in population and also the same degree of polymorphism in an individual, which is heritable from parents to children**  
c) Does not code for protein and is same in all members of the population.  
d) Codes for enzymes needed for DNA replication.
- The diagram shows an important concept in the genetic implication of DNA. Fill in the blanks A to C. (NEET 2013)  

A	B	C
DNA ---->mRNA ----->protein -proposed by---		

  
a) A- transcription, B- replication C-James Watson  
b) A- transcription, B- transcription, C-Erwin  
c) **A- transcription, B- translation, C-Francis Crick**  
d) A- transcription, B- extension, C-Rosalind Franklin
- Select the two statements out of the four (I –IV) given below about lac operon. [AIPMT 2010]  
i. Glucose or galactose may bind with the repressor and inactivate it.  
ii. **In the absence of lactose, the repressor binds with the operator region**  
iii. The z-gene codes for permease.  
iv. **This was elucidated by Francois Jacob and Jacques monod.**  
The correct statements are  
a) i and ii b) i and iii c) **ii and iv** d) i and ii
- Which one of the following pairs of codons is correctly matched with their function or the single for the particular amino acid? [AIPMT 2008]  
a) GUU, GCU – Alanine  
b) **UAG, UGA – Stop codon**  
c) AUG, ACG - start/methionine  
d) UUA, UCA – Leucine
- The Okazaki fragments in DNA chain growth (AIPMT 2007)  
a) **Result in transcription**  
b) Polymerise in the 3' to 5' direction and forms replication fork

- Prove semi- conservative nature of DNA replication  
d) Polymerises in the 5' to 3' direction and explain 3' to 5' DNA replication
- During translation initiation in prokaryotes, a GTP molecules is needed in [AIPMT 2003]  
a) **association of 30s, mRNA with formyl met tRNA**  
b) association of 50s subunit of ribosome with initiation complex  
c) formation of formyl met tRNA  
d) binding of 30s subunit of ribosome with mRNA.
- Reverse transcriptase is  
a) RNA dependent RNA polymerase  
b) DNA dependent RNA polymerase  
c) DNA dependent DNA polymerase  
d) **RNA dependent DNA polymerase**
- Escherichia coli* fully labeled with N14 medium. The two strands of DNA molecules of the first generation bacteria have  
a) Different density and do not resemble parent DNA  
b) **Different density but resemble parent DNA**  
c) Same density and resemble parent DNA  
d) Same density but do not resemble parents DNA

### Chapter 6 - Evolution

- The wings of a bird and of an insect are  
a) homologous structure and represent convergent evolution  
b) homologous structure and represent divergent evolution  
c) **analogous structure and represent convergent evolution**  
d) analogous structure and represent divergent evolution
- Which one of the following statement is correct?  
a) stem cells are specialized cells  
b) there is no evidence of the existence of gills during embryogenesis of mammals  
c) all plant and animal cells are totipotent  
d) **Ontogeny repeats phylogeny**
- In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by  
a)  $p^2$       b) **2pq**    c) pq    d)  $q^2$
- The correct order in Era is  
a) Palaeozoic---- Archaeozoic --- Coenozoic  
b) Archaeozoic ---Palaeozoic----- Proterozoic  
c) **Palaeozoic--- Mesozoic ----- Coenozoic**  
d) Mesozoic ---- Archaeozoic---- Proterozoic
- The most apparent change during the evolutionary history of *Homo sapiens* is traced in (AIPMT 2010)  
a) loss of body hair  
b) walking upright  
c) shortening of jaws  
d) **remarkable increase in the brain size**
- The process by which organisms with different evolutionary history evolve similar phenotypic adaptations in response to a common environmental challenge is called (AIPMT 2013)  
a) Natural selection  
b) **Convergent evolution**  
c) Non-random evolution  
d) Adaptive radiation Human health and diseases

## Chapter 7 & 8 - Human Health and Diseases and Immunology

1. Select the correct statement from the given below.

[AIPMT 2010]

- a) Barbiturates when given to criminals make them tell the truth
- b) Morphine is often given to persons who have under gone surgery as a pain killer**
- c) Chewing tobacco lowers blood pressure and heart rate
- d) Cocaine is given to patients after surgery as it stimulates recovery

2. Match the following [AIPMT 2008]

Column I	Column II
A) Amoebiasis	i) Treptonema pallidum
B) Diphtheria	ii) Use only sterilized food and water
C) Cholera	iii) DPT vaccine
D) Syphilis	iv) Use oral rehydration therapy

- |              |            |           |          |
|--------------|------------|-----------|----------|
| A            | B          | C         | D        |
| a) i         | ii         | iii       | iv       |
| b) ii        | iv         | i         | iii      |
| c) ii        | I          | iii       | iv       |
| <b>d) ii</b> | <b>iii</b> | <b>iv</b> | <b>i</b> |

3. If a person shows production of interferons in his body, the chances are that he has got an infection of

- a) Typhoid
- b) Measles**
- c) Tetanus
- d) Malaria

4. A person suffering from a disease caused by Plasmodium, experiences recurring chill and fever at the time when? [AIPMT MAINS 2010]

- a) The sporozoites released from RBC's are being rapidly killed and broken down inside spleen
- b) The trophozoites reach maximum growth and give out certain toxins.
- c) The parasite after its rapid multiplication inside RBC's ruptures them, releasing the stage to enter fresh RBC's**
- d) The microgametocytes and megagametocytes are being destroyed by the WBC's

5. Where will you look for the sporozoites of the material parasite? [AIPMT PRE 2011]

- a) Red blood corpuscles of humans suffering from malaria
- b) Spleen of infected humans
- c) Salivary glands of freshly moulted female anopheles mosquito
- d) Saliva of infected female anopheles mosquito**

6. Which one of the following organisms is scientifically and correctly named, correctly printed according to the International Rules of Nomenclature and correctly described? [AIPMT MAINS 2012]

- a) Plasmodium falciparum – a protozoan causing the most serious type of malaria.**
- b) Felis tigris – The Indian tiger is well protected in Gir forests
- c) E. Coli – The full name is Entamoeba coli, a commonly occurring bacterium in human intestine

7. Which of the following endoparasites of humans does show viviparity? [AIPMT 2015]

- a) *Ancylostoma duodenale*
- b) *Enterobius vermicularis*
- c) *Trichimella spiralis***
- d) *Ascaris lumbricoides*

8. The active form of *Entamoeba histolytica* feeds upon: [AIPMT 2015]

- a) Erythrocytes, mucosa and submucosa of colon**
- b) Mucosa and submucosa colon only
- c) Food in intestine
- d) Blood only

9. Which one of the following statements is correct with respect to AIDS? [AIPMT PRE 2010]

- a) The HIV can be transmitted through eating food together with an infected person
- b) Drug addicts are least susceptible to HIV infection
- c) AIDS patients are being fully cured 100 percent with proper care and nutrition
- d) The causative HIV retrovirus enters helper T-lymphocytes thus reducing their numbers**

10. Select the correct statement with respect to diseases and immunization [AIPMT MAINS 2011]

- a) If due to some reason B and T lymphocytes are damaged, the body will not produce antibodies against a pathogen**
- b) Injection of dead/inactivated pathogens caused passive immunity
- c) Certain protozoans have been used in mass production of hepatitis B vaccine
- d) Injection of snake antivenom against snake bite is an example of active immunization

11. Which one of the following statements is correct with respect to immunity? [AIPMT MAINS 2012]

- a) The antibodies against small pox pathogen are produced by T – lymphocytes
- b) Antibodies are protein molecules each of which has four light chains
- c) Rejection of a kidney graft is the function of B – lymphocytes
- d) Preformed antibodies need to be injected to treat the bite by a viper snake.**

12. Which one of the following is not a property of cancerous cells whereas the remaining three are? [AIPMT PRE 2012]

- a) They compete with normal cells for vital nutrients
- b) They do not remain confined in the area of formation
- c) They divide in an uncontrolled manner
- d) They show contact inhibition**

13. At which stager HIV infection does one usually show symptoms of AIDS? [AIPMT 2014]

- a) Within 15 days of sexual contact with an infected person
- b) When the infected retro virus enters host cells
- c) When HIV damages large number of helper T- Lymphocytes**
- d) When the viral DNA is produced by reverse transcriptase

14. Match each disease with its correct type of vaccine [AIPMT 2015]





a) Tuberculosis	i) harmless virus
b) Whooping cough	ii) inactivated toxin
c) Diphtheria	iii) killed bacteria
d) Polio	iv) harmless bacteria

- a) b) c) d)  
a) (ii) (i) (iii) (iv)  
b) (iii) (ii) (iv) (i)  
c) **(iv) (iii) (ii) (i)**  
d) (i) (ii) (iv) (iii)
15. Which of the following is correct regarding AIDS causative agent HIV? [NEET-II, 2016]  
a) **HIV is enveloped virus that contains two identical molecules of single-stranded RNA and two molecules of reverse transcriptase**  
b) HIV is unenveloped retrovirus  
c) HIV does not escape but attacks the acquired immune response  
d) HIV is enveloped virus containing one molecule of single-stranded RNA and one molecule of reverse transcriptase

### Chapter 9 - Microbes in Human Welfare

1. When domestic sewage mixes with river water [AIPMT MAINS 2010]  
a) Small animals like rat will die after drinking river water  
b) The increased microbial activity releases micronutrients such as iron.  
c) **The increased microbial activity uses up dissolved oxygen**  
d) The river water is still suitable for drinking as impurities are only about 0.1 per cent
2. Select the correct statement from the following [AIPMT PRE 2010]  
a) Biogas is produced by the activity of aerobic bacteria on animal waste  
b) Methanobacterium is an aerobic bacterium found in rumen of cattle  
c) Biogas, commonly called gobar gas, is pure methane  
d) **Activated sludge-sediment in settlement tank of sewage treatment plant is a right source of aerobic bacteria**
3. Read the following four statements (A to D): [AIPMT MAINS 2012]  
a) Colostrum is recommended for the new born because it is rich in antigen  
b) Chikungunya is caused by a gram negative bacterium  
c) Tissue culture has proved useful in obtaining virus-free plants.  
d) Beer is manufactured by distillation of fermented grape juice  
How many of the above statements are wrong?  
a) **Three** b) Four c) One d) Two
4. Which of the following are likely to be present in deep sea water? [AIPMT 2013]  
a) Archaeobacteria b) Eubacteria  
c) Blue-green algae d) Saprophytic fungi

5. During sewage treatment, biogas are produced which includes [AIPMT 2015]  
a) **Methane, hydrogen sulphide, carbon dioxide**  
b) Methane, oxygen, hydrogen sulphide  
c) Hydrogen sulphide, methane, sulphur dioxide  
d) Hydrogen sulphide, nitrogen, methane
6. What gases are produced in anaerobic sludge digesters? [AIPMT 2014]  
a) Methane and CO<sub>2</sub> only  
b) **Methane, hydrogen sulphide and CO<sub>2</sub>**  
c) Methane, hydrogen sulphide and O<sub>2</sub>  
d) Hydrogen sulphide and CO<sub>2</sub>
7. Match the following list of microbes and their importance: [RE-AIPMT 2015]

a) <i>Saccharomyces cerevisiae</i>	(i) Production of immunosuppressive agents
b) <i>Monascus purpureus</i>	(ii) Ripening of Swiss cheese
c) <i>Trichoderma polysporum</i>	(iii) Commercial production of ethanol
d) <i>Propionibacterium shermanii</i>	(iv) Production of blood-cholesterol lowering agents.

- e) (iv) (iii) (ii) (i)  
f) (iv) (ii) (i) (iii)  
g) (iii) (i) (iv) (ii)  
h) **(iii) (iv) (i) (ii)**
8. Which of the following is wrongly matched in the given table? [NEET - I, 2016]

Microbe	Product	Application
(a) <i>Trichoderma polysporum</i>	Cyclosporin A	Immunosuppressive drug
(b) <i>Monascus purpureus</i>	Statins	Lowering of blood cholesterol
(c) <i>Streptococcus</i>	Streptokinase	Removal of clot from blood vessel
(d) <i>Clostridium butylicum</i>	Lipase	<b>Removal of oil stains</b>

9. Match Column - I with Column - II and select the correct options using the codes given below: [NEET - II, 2016]

Column I	Column II
A. Citric acid	1. Trichoderma
B. Cyclosporin A	2. Clostridium
C. Statins	3. Aspergillus
D. Butyric acid	4. Monascus

- a) A:3, B:1, C:4, D:2  
b) A:1, B:4, C:2, D:3  
c) A:3, B:4, C:1, D:2  
d) **A:3, B:1, C:2, D:4**

### Chapter 10 - Biotechnology and Its Application

1. Genetic engineering has been successfully used for producing [AIPMT RE 2010]  
a) **Transgenic mice for testing safety of polio vaccine before used in humans**  
b) Transgenic models for studying new treatments for certain cardiac diseases



- c) Transgenic cow Rosie which produces high fat milk for making ghee  
d) Animals like bulls for farm work as they have super power
2. Read the following four statements (A to D) about certain mistakes in two of them. [AIPMT MAINS 2011]  
a) The first transgenic buffalo, Rosie produced milk which was human alpha – lactalbumin enriched.  
b) Restriction enzymes are used in isolation of DNA from other macromolecules.  
c) Downstream processing is one of the steps of rDNA technology  
d) Disarmed pathogen vectors are also used in transfer of rDNA into the host.  
Which of the two statements have mistakes?  
a) B and C                      b) C and D  
c) A and C                      **d) A and B**
3. The colonies of recombinant bacteria appear white in contrast to blue colonies of non-recombinant bacteria because of [AIPMT 2013]  
**a) Non-recombinant bacteria containing  $\beta$ -galactosidase.**  
b) Insertional inactivation of  $\alpha$ -galactosidase in non-recombinant bacteria.  
c) Insertional inactivation of  $\alpha$ -galactosidase in recombinant bacteria.  
d) Inactivation of glycosidase enzyme in recombinant bacteria
4. Which body of the Government of India regulates GM research and safety of introducing GM organism for public services? [AIPMT 2015]  
a) Bio-safety committee  
b) Indian council of agricultural research  
**c) Genetic engineering approval committee**  
d) Research committee on Genetic manipulation
5. In genetic engineering, a DNS segment (gene) of interest is transferred to the host cell through a vector. Consider the following four agents (A to D) in this regard and select correct option about which one or more of these can be used as vector/vectors. [AIPMT MAIN 2010]  
A) A bacterium                      B) Plasmid  
C) Plasmodium                      D) Bacteriophage  
a) (A), (B) and (D) only                      b) (A) only  
c) (A) and (C) only                      **d) (B) and (D) only**
6. Which one of the following palindromic base sequences in DNA can be easily cut at about the middle by some particular restriction enzyme? [AIPMT PRE 2010]  
a) 5' – CGTTCG – 3'    3' –ATGGTA –5'  
b) 5' –GATATG –3'    3' CTACTA –5'  
**c) 5' –GAATTC – 3'    3' – CTTAAG–5'**  
d) 5' –CACGTA –3'    3' –CTCAGT –5'
7. Restriction endonucleases are enzymes which [AIPMT PRE 2010]  
**a) Make cuts at specific positions within the DNA molecule.**  
b) Recognize a specific nucleotide sequence for binding of DNA ligase.

- c) Restrict the action of the enzyme DNA polymerase.  
d) Remove nucleotides from the ends of the DNA molecule.
8. Stirred – tank bioreactors have been designed for [AIPMT PRE 2010]  
a) Addition of preservatives of the product  
b) Purification of the product  
c) Ensuring anaerobic conditions in the culture vessel  
**d) Availability of oxygen throughout the process**
9. There is a restriction endonuclease called EcoRI. What does 'co' part in it stand for? [AIPMT PRE 2011]  
a) Coelom                      b) Coenzyme  
**c) Coli**                      d) Colon
10. Which one is true state regarding DNA polymerase used in PCR? [AIPMT PRE 2012]  
a) It is used to ligate introduced DNA in recipient cells.  
b) It serves as selectable marker  
c) It is isolated from a virus.  
**d) It remains active at high temperature.**
11. For transformation, micro-particles coated with DNA to be bombarded with gene gun are made up of [AIPMT PRE 2012]  
a) Silver or Platinum                      b) Platinum or Zinc  
c) Silicon or Platinum                      **d) Gold or Tungsten**

## Chapter 11 - Organisms and Population

1. Which one of the following is most appropriately defined? [AIPMT MAINS 2010]  
a) Host is an organism which provides food to another organism.  
b) Amensalism is a relationship in which one species is benefited whereas the other is unaffected.  
**c) Predator is an organism that catches and kills other organism for food.**  
d) Parasite is an organism which always lives inside the body of other organism and may kill it.
2. Study the four statements (1 to 4) given below and select the two correct ones out of them. [AIPMT PRE 2010]  
a) A lion eating a deer and a sparrow feeding on grain are ecologically similar in being consumers.  
b) Predator star fish Pisaster helps in maintaining species diversity of some invertebrates.  
c) Predators ultimately lead to the extinction of prey species.  
d) Production of chemicals such as nicotine, strychnine by the plants is metabolic disorders.  
The two correct statements are  
a) (B) and (C)                      b) (C) and (D)  
c) (A) and (D)                      **d) (A) and (B)**
3. Which two of the following changes ( 1 to 4) usually tend to occur in the plain dwellers when they move to high altitudes(3500 m or more)? [AIPMT PRE 2010]  
A) Increase in red blood cell size  
B) Increase in red blood cell production  
C) Increased breathing rate  
D) Increase in thrombocyte count  
a) (B) and (C)                      b) (C) and (D)  
c) (A) and (D)                      **d) (A) and (B)**



4. Consider the following four conditions (A-D) and select the correct pair of them as adaptation to environment in desert lizards. [AIPMT PRE 2011]  
The conditions:  
A) Burrowing in soil to escape high temperature.  
B) Losing heat rapidly from the body during high temperature  
C) Bask in sun when temperature is low  
D) Insulating body due to thick fatty dermis.  
a) (A) and (C)      b) (B) and (D)  
c) (A) and (B)      d) (C) and (D)
5. People who have migrated from the plains to an area adjoining Rohtang Pass about six months back [AIPMT PRE 2012]  
a) Have more RBC's and their haemoglobin has a lower binding affinity to  $O_2$   
b) Are not physically fit to play games like football  
c) Suffer from altitude sickness with symptoms like nausea, fatigue, etc.,  
d) Have the usual RBC count but then haemoglobin has very high binding affinity to  $O_2$
6. A biologist studies the population of rats in a barn. He found that the average natality was 250, average mortality is 240, immigration is 20 and emigration to be 30. The net increase in population is [AIPMT 2013]  
a) 10      b) 15      c) 05      d) Zero
7. An association of individuals of different species living in the same habitat and having functional interaction is: [RE-AIPMT 2015]  
a) Biotic community      b) Ecosystem  
c) Population      d) Ecological niche
8. Gause's principle of competitive exclusion states that: [NEET - I, 2016]  
a) More abundant species will exclude the less abundant species through competition  
b) Competition for the same resources excludes species having different food preferences  
c) No two species can occupy the same niche indefinitely for the same limiting resources  
d) Larger organisms exclude smaller ones through competition
9. When does the growth rate of a population following the logistic model equal zero? The logistic model is given as  $dN/dt = rN(1 - N/K)$ : [NEET - I, 2016]  
a) When  $N/K$  is exactly one  
b) When  $N$  nears the carrying capacity of the habitat  
c) When  $N/K$  equals zero  
d) When death rate is greater than birth rate

#### Chapter 12 - Biodiversity and conservation

1. Select the correct statement about biodiversity [AIPMT MAINS 2012]  
a) Large scale planting of Bt cotton has no adverse effect on biodiversity.  
b) Western Ghats have a very high degree of species richness and endemism  
c) Conservation of biodiversity is just a fad pursued by the developed countries

- d) The desert areas of Rajasthan and Gujarat have a very high level of desert animal species as well as numerous rare animals
2. Sacred groves are specially useful in [AIPMT MAINS 2012]  
a) Preventing soil erosion  
b) Year-round flow of water in rivers  
c) Conserving rare and threatened species  
d) Generating environmental awareness
3. The highest number of species in the world is represented by [AIPMT PRE 2012]  
a) Fungi      b) Mosses      c) Algae      d) Lichens
4. Which of the following is not used for ex situ plant conservation? [AIPMT PRE 2012]  
a) Field gene banks      b) Seed banks  
c) Shifting cultivation      d) Botanical gardens
5. In which of the following both pairs have correct combination? [AIPMT 2015]  
a) In situ conservation: National Park  
Ex situ conservation: Botanical Garden  
b) In situ conservation: Cryopreservation  
Ex situ conservation: Wildlife Sanctuary  
c) In situ conservation: Seed Bank  
Ex situ conservation: National park  
d) In situ conservation: Tissue culture  
Ex situ conservation: Sacred groves
6. Cryopreservation of gametes of threatened species in viable and fertile condition can be referred to as [AIPMT 2015]  
a) In situ conservation of biodiversity  
b) Advanced ex situ conservation of biodiversity  
c) In situ conservation by sacred groves  
d) In situ cryo-conservation of biodiversity
7. The species confined to a particular region and not found elsewhere is termed as [RE-AIPMT 2015]  
a) Alien      b) Endemic      c) Rare      d) Keystone
8. Which of the following National Parks is home to the famous musk deer or hangul? [NEET-II, 2016]  
a) Bandhavgarh National Park, Madhya Pradesh  
b) Eaglenest Wildlife Sanctuary, Arunachal Pradesh  
c) Dachigam National Park, Jammu & Kashmir  
d) Keibul Lamjao National Park, Manipur

#### Chapter 13 - Environmental Issues

1. DB is a standard abbreviation used for the quantitative expression of [AIPMT PRE -2010]  
a) The density of bacteria in a medium  
b) A particular pollutant  
c) The dominant bacillus in a culture  
d) A certain pesticide



2. Which one of the following expanded forms of the following acronyms is correct? [AIPMT PRE-2011]

a)UNEP	United Nations Environmental Policy
b)EPA	Environmental Pollution Agency
c)IUCN	<b>International Union for Conservation of Nature and Natural Resources</b>
d)IPCC	International Penal for climate Change

3. In an area where DDT had been used extensively the population of birds declined significantly because

[AIPMT PRE-2012]

- a) Birds stopped laying eggs
  - b) Earthworms in the area got eradicated.
  - c) Cobras were feeding exclusively on birds.
  - d) Many of the birds eggs, laid, did not hatch.**
4. Measuring Biochemical Oxygen Demand (BOD) is a method used for [AIPMT PRE-2012]
- a) Estimating the amount of organic matter in sewage water.**
  - b) Working out the efficiency of oil driven automobile engines.
  - c) Measuring the activity of *saccharomyces cerevisiae* in producing curd on a commercial scales
  - d) Working out the efficiency of RBCs about their capacity to carry oxygen
5. A scrubber in the exhaust of a chemical industrial plant removes
- a) Gases like sulphur dioxide.
  - b) Particulate matter of the size 5 micrometer or above.**
  - c) Gases like ozone and methane
  - d) Particulate matter of the size 2.5 micrometer or less

6. Rachel Carson's famous book 'Silent Spring' is related to [AIPMT-2015]

- a) Pesticide pollution**
- b) Noise Pollution
- c) Population explosion
- d) Ecosystem management

7. Increase in the concentration of the toxicant at successive trophic levels is known as [RE AIPMT-2015]

- a) Biodeterioration
- b) Biotransformation
- c) Biogeochemical cycling
- d) Biomagnification**

8. A river with an inflow of domestic sewage rich in organic waste may result in: [NEET-I, 2016]

- a) Drying of the river very soon due to algal bloom
- b) Increased population of aquatic food web organisms
- c) An increased production of fish due to biodegradable nutrients
- d) Death of fish due to lack of oxygen**

9. A lake which is rich in organic waste may result in [NEET-II, 2016]

- a) Drying of the lake due to algal bloom
- b) Increased population of fish due to lots of nutrients
- c) Mortality of fish due to lack of oxygen**
- d) Increases population of aquatic organisms due to minerals

10. The highest DDT concentration in aquatic food chain shall occur in [NEET-II, 2016]

- a) Seagull**
- b) Crab
- c) Cell
- d) Phytoplankton