

**BBM**  
**Ludhiana**  
**Half yearly half**

**Class:- 12th**                      **Subject:- Biology**  
**Maximum Marks:- 32**              **TIME ALLOWED:-**

<b>Q.No.</b>	<b>SECTION A (MULTIPLE CHOICE QUESTIONS)</b>	<b>Marks</b>
1	(c) By Both	1
2	(b) Adenosine deaminase	1
3	(b) Cancer	1
4	(c) dsRNA	1
5	(c) A transgenic rice having gene for p-carotene	1
6	(c) Alkaline pH of gut	1
7	(c) Study of altered physiology of host	1
8	(d) Inactive toxin.	1
9	(a) Bone marrow	1
10	(a) An RNA virus that can synthesise DNA during infection	1
11	(c) Either RNA or DNA	1
12	(d) Used to treat emphysema.	1
<b>SECTION VERY SHORT QUESTION</b>		
13	Meloidegyneincognitia.	2
14	The best example of microbes release gases during metabolism are the puffed dough & bread.	2
<b>SECTION SHOT QUESTION</b>		
15	In conventional methods, presence of pathogen is normally suspected only when pathogen has produced a disease symptom. By this time the concentration of pathogen is already very high in Body which could be harmful but with molecular diagnostics, Small amount of pathogen could be detected by amplification by PCR.	3
16	Bone marrow transplantation having functional ADA enzyme and Enzyme replacement therapy.	3

## SECTION LONG QUESTION

(i) Sporozoite stage enters human body along with saliva of female anopheline mosquito as it bites to suck blood.

17 (ii) Asexual phases of the life history of plasmodium in the body of a human 5

(iii) When the parasite attacks red blood cells, it leads to its rupture with the release of haemozoin, which is a toxin. As the haemozoin is released into blood, symptoms (high fever) of malaria appear.

OR

1. Conferring upon the demands of the present situation of our country, the following aspects of reproductive health should be given special attention:

1. Control of the human population.
2. Creation of awareness about reproduction-related aspects among people including sex education to the students. 5
3. Implementation of various action plans to attain reproductive health and building a reproductively healthy society.
4. Continued research on reproduction-related areas.
5. Providing medical assistance and care to people especially during pregnancy, delivery, STDs, abortions, contraception, menstrual problems, infertility, etc.
6. Measures of birth control.

Role of ribosomes: Ribosomes usually form linear or helical groups during active protein synthesis called polyribosomes or polysomes. The mRNA strand having coded information joins along with smaller subunits of ribosomes. The adjacent ribosomes are 360 Å apart.

The different parts of the ribosome connected with protein synthesis are:

- 18 1. 5
1. A tunnel for mRNA.
  2. A groove for the passage of newly synthesized polypeptide (larger subunit).
  3. Two active sites (P-site-peptidyl transfer or donor site and A-site or aminoacyl or acceptor site).
  4. A binding site for tRNA near A-site.
  5. Presence of enzyme peptidyl transferase.
  6. Recognition point of smaller subunit for mRNA.
  7. Presence of GTP-ase, binding sites for elongation factors, and translocases.

## SECTION CASE STUDY

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1. (d) Both (a) and (b).

**Explanation:**

Luciferase catalyses the production of a green fluorescent protein when luciferin is added.

1. (c) AAV infect cells more readily than AAV 2.5 T.

**Explanation:**

AAV 2.5T infects cells more readily than AAV.

1. (d) All of these.

**Explanation:**

cDNA is a DNA copy produced from the m RNA by reverse transcriptase.

1. (d) All of these.
2. (c) Replacing a defective gene with a functional gene.

**Explanation:**

Gene therapy refers to the insertion of genes into an individual cells and tissues to treat a disease. Essentially defective/mutant genes are replaced with healthy, functional ones.

**OR**

1. (d) December 10 is recalled as World AIDS Day.

**Explanation:**

Every year, December 1 is designated as World AIDS Day.

1. (d) Use of contaminated needles and syringes to inject drugs
2. (a) ELISA test

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**Explanation:**

ELISA test, also called EIA for enzyme immunoassay is used to detect HIV antibody. It checks for certain proteins that the body makes in response to HIV.

1. (d) All of these
2. (c) It consists of reverse transcriptase enzyme.

**Explanation:**

HIV is spherical with a diameter of 90-120 nm. Its genome consists of single stranded RNA. The envelope consists of a lipid bilayer derived from host cell membrane and projection knob like glycoproteins. It contains two protein coats.

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1. (b) Progestin only.

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**Explanation:**

Mini pills contain progestin only, with no estrogen.

1. (b) By inhibiting ovulation.

**Explanation:**

Oral contraceptive pills inhibit ovulation and implantation.

1. (d) Saheli.

**Explanation:**

Saheli contains non-steroidal preparation called centchroman.

1. (b) Oral pills have to be taken daily for 7 days starting within first five days of menstrual cycle.

**Explanation:**

Oral pills have to be taken daily for 21 days starting within first five days of menstrual cycle.

(b) Both assertion and reason are true, but reason is not the correct explanation of assertion.

**OR**

(i) - (d) Pollen grain Z comes from a flower of an incompatible species.

**Explanation:**

Pollen grains can only germinate if the pollen grain and style tissues are compatible, i.e., of the same or closely related species. Pollen grains X and Y must have come from a compatible species.

(ii) - (b) It acts as a conduit to transport male gametes from the stigma to the ovule.

(iii) - (c) Entomophily.

**Explanation:**

Entomophily is the type of pollination that takes place through the agency of insects. The insect-loving flower possesses various adaptations by which they attract insects and use them as carrier of pollen grains for the purpose of cross pollination. 0

(iv) - (b) The pollen grains are tiny and light.

**Explanation:**

Pollen grains are microscopic structures that carry the male reproductive cell of plants. The inside of the grain contains cytoplasm along with the tube cell (which becomes the pollen tube) and the generative cell (which releases the sperm nuclei).

(v) - (b) Entomophilous flowers.

**Explanation:**

Insect-fertilizable or Entomophilous flowers are those which are sought by insects, for pollen or for nectar, or for both.