Section : **Biology**

Q.1 **The unequivocal proof that DNA is the genetic material came from the experiments of ___.**

1. **Matthew Meselson and Franklin Stahl**
2. **Frederick Griffith**
3. **Oswald Avery, Colin MacLeod and Maclyn McCarty**
4. **Alfred Hershey and Martha Chase**

Options 1. 1

2. 2

3. 3

4. 4

Q.2 **The construction of the first recombinant DNA emerged from linking a gene encoding antibiotic resistance with a native plasmid of _____.**

1. ***Streptococcus pneumoniae***
2. ***Escherichia coli***
3. ***Staphylococcus***
4. ***Salmonella typhimurium***

Options 1. 1

2. 2

3. 3

4. 4

Q.3 **Which one of the following layers of microsporangium nourishes the developing pollen grains?**

1. **Endothecium**
2. **Tapetum**
3. **Epidermis**
4. **Middle layer**

Options 1. 1

2. 2

3. 3

4. 4

Q.4 **Match List-I with List-II**

List-I (Types of inheritance)	**List-II (Examples)**
(A). Pleiotropy	**(I). ABO blood grouping in human**
(B). Polygenic inheritance	**(II). Snapdragon plant**
(C). Incomplete dominance	**(III). Phenylketonuria**
(D). Co-dominance	**(IV). Human skin colour**

Choose the correct answer from the options given below:

1. **(A) - (III), (B) - (IV), (C) - (II), (D) - (I)**
2. **(A) - (I), (B) - (III), (C) - (II), (D) - (IV)**
3. **(A) - (I), (B) - (II), (C) - (IV), (D) - (III)**
4. **(A) - (III), (B) - (IV), (C) - (I), (D) - (II)**

Options 1. 1

2. 2

3. 3

4. 4

Q.5 **Match List-I with List-II**

List-I (Techniques)	**List-II (Related features)**
(A). ELISA	**(I). Production of mature insulin**
(B). PCR	**(II). Antigen-antibody interaction**
(C). Autoradiography	**(III). Amplification of DNA**
(D). Recombinant DNA technology	**(IV). Photographic film**

Choose the correct answer from the options given below:

1. (A) – (II), (B) – (IV), (C) – (III), (D) – (I)
2. (A) – (I), (B) – (III), (C) – (II), (D) – (IV)
3. (A) – (II), (B) – (III), (C) – (IV), (D) – (I)
4. (A) – (III), (B) – (IV), (C) – (I), (D) – (II)

Options 1. 1

2. 2

3. 3

4. 4

Q.6 What is the defense mechanism adopted by *Acacia* and *Cactus* to protect themselves from predators (herbivores)?

1. Fleshy stem
2. Dry habitat
3. Thorns
4. Rough texture

Options 1. 1

2. 2

3. 3

4. 4

Q.7 Arrange the trophic levels in an order from lowest to highest in a terrestrial food chain:

(A). Wolf
(B). Grass
(C). Cow
(D). Lion

Choose the correct answer from the options given below:

1. (A), (B), (C), (D)
2. (B), (C), (A), (D)
3. (B), (A), (D), (C)
4. (C), (B), (D), (A)

Options 1. 1

2. 2

3. 3

4. 4

Q.8 The decomposition rate is slower if detritus is rich in–

1. Nitrogen
2. Sugars
3. Cellulose
4. Chitin

Options 1. 1

2. 2

3. 3

4. 4

Q.9 Which is not the male sex accessory gland?

1. Seminal vesicle
2. Prostate
3. Rete testis
4. Bulbourethral gland

Options 1. 1

2. 2

3. 3

4. 4

Q.10 The technique in which the semen collected either from the husband or the donor is artificially introduced into the uterus is known as–

1. Gamete intra fallopian transfer
2. Zygote intra fallopian transfer
3. Intra cytoplasmic sperm injection
4. Intra uterine insemination

Options 1. 1
2. 2
3. 3
4. 4

Q.11 Which one of the following regions is not present in transcriptional unit of DNA
1. A Promoter
2. The Structural gene
3. Initiation factor
4. A Terminator

Options 1. 1
2. 2
3. 3
4. 4

Q.12 RNA polymerase III is responsible for transcription of -
1. rRNAs
2. hnRNA
3. tRNA, 5srRNA, and snRNAs
4. ds RNA

Options 1. 1
2. 2
3. 3
4. 4

Q.13 Roman numbers in the names of restriction enzymes indicate –
1. Number of genus of the bacteria
2. Number of species of bacteria
3. Order in which enzymes were isolated from that strain of bacteria
4. Position at which they cut in the DNA sequence

Options 1. 1
2. 2
3. 3
4. 4

Q.14 Identify the correct sequence of structures formed during spermatogenesis.
(A) Spermatozoa
(B) Secondary spermatocytes
(C) Spermatogonia
(D) Spermatids
Choose the correct answer from the options given below:
1. (A), (C), (D), (B)
2. (A), (B), (C), (D)
3. (B), (A), (D), (C)
4. (C), (B), (D), (A)

Options 1. 1
2. 2
3. 3
4. 4

Q.15 Who discovered that the behaviour of chromosomes was parallel to the behaviour of genes ?
1. Sutton and Boveri
2. de Vries and Correns
3. Mendel
4. Thomas Hunt Morgan

Options 1. 1
2. 2
3. 3
4. 4

Q.16 The menstrual flow results due to:

A. Increased estrogen levels
B. When released ovum is not fertilized
C. When pregnancy occurs
D. Breakdown of the endometrial lining of the uterus and its blood vessels

1. (A), (B), (C) and (D)
2. (A), (C) and (D) only
3. (A), (B) and (D) only
4. (B) and (D) only

Options 1. 1
2. 2
3. 3
4. 4

Q.17 In species-area relationships equation - log S = log C + Z log A
'Z' denotes the -

1. Area
2. Species richness
3. Regression coefficient
4. Y-intercept

Options 1. 1
2. 2
3. 3
4. 4

Q.18 In water hyacinth, pollination is carried out by -

(A). Wind
(B). Water
(C). Insects
(D). Animals

Choose the correct answer from the options given below:

1. (A), (B) and (D) only
2. (A) and (C) only
3. (A), (B), (C) and (D)
4. (B), (C) and (D) only

Options 1. 1
2. 2
3. 3
4. 4

Q.19 Match List-I with List-II

List-I Signs of Interspecific Interactions (Between Species A and B)	List-II Population Interactions
(A). +/-	(I). Commensalism
(B). +/+	(II). Parasitism
(C). +/0	(III). Amensalism
(D). -/0	(IV). Mutualism

'+' sign for beneficial interaction, '-' sign for detrimental interaction and '0' for neutral interaction.

Choose the correct answer from the options given below:

1. (A) – (II), (B) – (IV), (C) – (I), (D) – (III)
2. (A) – (I), (B) – (III), (C) – (II), (D) – (IV)
3. (A) – (II), (B) – (III), (C) – (IV), (D) – (I)
4. (A) – (II), (B) – (IV), (C) – (III), (D) – (I)

Options 1. 1
2. 2
3. 3
4. 4

Q.20 Select the examples of *ex-situ* conservation:

(A). Zoological parks
(B). Sanctuaries
(C). Seed banks
(D). Cryopreservation of gametes
Choose the correct answer from the options given below:
1. (A), (C) and (D) only
2. (A), (B) and (C) only
3. (A), (B), (C) and (D)
4. (B), (C) and (D) only

Options 1. 1
2. 2
3. 3
4. 4

Q.21 The Western Ghats have a greater number of amphibian species than the Eastern Ghats. This is an example of :
1. Genetic Diversity
2. Species Diversity
3. Ecological Diversity
4. Global Diversity

Options 1. 1
2. 2
3. 3
4. 4

Q.22 Bt toxin is expressed in plants to provide resistance to insects; hence used as a bio-pesticide. Select the correct examples of Bt plants:
(A). Bt Cotton
(B). Bt Rice
(C). Bt Peas
(D). Bt Corn
Choose the correct answer from the options given below:
1. (A), (B) and (D) only
2. (A), (B) and (C) only
3. (A), (B), (C) and (D)
4. (B), (C) and (D) only

Options 1. 1
2. 2
3. 3
4. 4

Q.23 Match List-I with List-II

List-I	List-II
Terms	Functions
(A). Cloning	(I). Cuts at the specific position within DNA
(B). Plasmid	(II). Making multiple identical copies of template DNA
(C). Origin of replication	(III). Autonomously replicating circular extrachromosomal DNA
(D). Endonuclease	(IV). Initiates replication

Choose the correct answer from the options given below:
1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
2. (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
3. (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
4. (A) - (II), (B) - (III), (C) - (I), (D) - (IV)

Options 1. 1
2. 2
3. 3
4. 4

Q.24 About _____ the first cellular forms of life appeared on earth.
1. 200 million years ago
2. 500 million years ago

3. 2000 million years ago
4. 20000 million years ago

Options 1. 1
2. 2
3. 3
4. 4

Q.25 Match List-I with List-II

List-I (Geological periods)	List-II (Plant forms)
(A). Cretaceous	(I). Seed ferns
(B). Jurassic	(II). Progymnosperms
(C). Carboniferous	(III). Sphenopsids
(D). Devonian	(IV). Conifers

Choose the correct answer from the options given below:
1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV)
2. (A) - (I), (B) - (III), (C) - (II), (D) - (IV)
3. (A) - (III), (B) - (IV), (C) - (I), (D) - (II)
4. (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

Options 1. 1
2. 2
3. 3
4. 4

Q.26 A nucleoside comprises:
1. A nitrogenous base, a pentose sugar, and a phosphate group
2. A nitrogenous base and a phosphate group
3. A nitrogenous base and a pentose sugar
4. A pentose sugar and a phosphate group

Options 1. 1
2. 2
3. 3
4. 4

Q.27 Arrange the steps for transformation of recombinant DNA in sequence -
(A). For heat shock, bacterial cells are placed at 42°C; and then they are placed on ice.
(B). The bacterial cells must be made 'competent' to take up DNA by treating them with a specific concentration of divalent cation such as calcium.
(C). The bacteria are now able to take up the recombinant DNA.
(D). Recombinant DNA can then be forced into those cells by incubating the cells with recombinant DNA on ice.
Choose the correct answer from the options given below:
1. (B), (D), (A), (C)
2. (A), (C), (B), (D)
3. (B), (A), (D), (C)
4. (C), (B), (D), (A)

Options 1. 1
2. 2
3. 3
4. 4

Q.28
Identify the correct combination of intra uterine devices.
(A) Lippes loop
(B) LNG-20
(C) Saheli
(D) Multiload 375
Choose the correct answer from the options given below:
1. (B), (C) and (D) only
2. (A), (B) and (C) only
3. (A), (B), (C) and (D)
4. (A), (B) and (D) only

Options 1. 1
2. 2
3. 3
4. 4

Q.29 'GEAC' stands for -
1. Genetic Engineering Association Committee
2. Genetic Engineering Approval Committee
3. Genetic Editing Approval Commission
4. Genetic Editing Association Commission

Options 1. 1
2. 2
3. 3
4. 4

Q.30 A single stranded DNA or RNA tagged with a radioactive probe is allowed to hybridize to its complementary DNA in a clone of cells followed by detection using _____.
1. Polymerase chain reaction
2. ELISA
3. Autoradiography
4. Gel electrophoresis

Options 1. 1
2. 2
3. 3
4. 4

Q.31 Identify the autosome-linked recessive disorder.
1. Myotonic dystrophy
2. Color blindness
3. Thalassemia
4. Haemophilia

Options 1. 1
2. 2
3. 3
4. 4

Q.32 When resources are unlimited in a habitat, what type of growth is seen in the population?
1. Exponential growth
2. Logistic growth
3. Stable growth
4. Lagging growth

Options 1. 1
2. 2
3. 3
4. 4

Q.33 The first clinical gene therapy was given in 1990 to a 4-year-old girl with _____.
1. Adenosine aminase deficiency
2. Cytosine deaminase deficiency
3. Adenosine deaminase deficiency

4. Adenosine protease deficiency

Options 1. 1
2. 2
3. 3
4. 4

Q.34 Identify, which is not the recently extinct species?
1. Bali tiger
2. Caspian tiger
3. Bengal tiger
4. Javan tiger

Options 1. 1
2. 2
3. 3
4. 4

Q.35 Which one of the followings has the ability to transform normal cells into cancerous cells in animals?
1. β-galactosidase
2. Retroviruses
3. T-DNA
4. Rhinoviruses

Options 1. 1
2. 2
3. 3
4. 4

Q.36 During ice age between _____ modern *Homo sapiens* arose.
1. 100,000 - 40,000 years ago
2. 75,000 - 10,000 years ago
3. 2,000,000 - 1,500,000 years ago
4. 4,000,000 - 3,000,000 years ago

Options 1. 1
2. 2
3. 3
4. 4

Q.37 Medical termination of pregnancy (MTP) is considered relatively safe -
1. Upto 30 weeks of pregnancy
2. Upto 24 weeks of pregnancy
3. Upto 12 weeks of pregnancy
4. Upto 18 weeks of pregnancy

Options 1. 1
2. 2
3. 3
4. 4

Q.38 Identify the condition when more than one pistils are fused together in angiosperms:
1. Syncarpous
2. Monocarpellary
3. Apocarpous
4. Multicarpellary

Options 1. 1
2. 2
3. 3
4. 4

Q.39 Identify the correct sequence of events during the menstrual cycle in female.
(A) Next cycle begins
(B) Proliferative phase

(C) Menstruation
(D) Secretory phase
Choose the correct answer from the options given below:
1. (C), (D), (B), (A)
2. (A), (B), (D), (C)
3. (B), (A), (D), (C)
4. (C), (B), (D), (A)

Options 1. 1
2. 2
3. 3
4. 4

Q.40 Arrange the amount of energy in a sequence from the highest trophic level to the lowest trophic level (Pyramid of Energy):
(A). 10,000 J
(B). 1000 J
(C). 10 J
(D). 100 J
Choose the correct answer from the options given below:
1. (A), (B), (D), (C)
2. (A), (C), (B), (D)
3. (C), (D), (B), (A)
4. (C), (B), (D), (A)

Options 1. 1
2. 2
3. 3
4. 4

Q.41 Read the following passage carefully and answer the given questions.
Plasmodium, a tiny protozoan is responsible for the disease malaria. Different species of ***Plasmodium*** (***P. vivax, P. malaria*** and ***P. falciparum***) are responsible for different types of malaria. Of these, malignant malaria caused by ***Plasmodium falciparum*** is the most serious one and can even be fatal. Innate immunity consist of four types of barriers. These are — (i) Physical barriers- skin on our body is the main barrier which prevents entry of the micro-organisms. (ii) Physiological barriers- Acid in the stomach, saliva in the mouth, tears from eyes–all prevent microbial growth. (iii) Cellular barriers- Certain types of leukocytes (WBC) of our body like polymorpho-nuclear leukocytes (PMNL-neutrophils) and monocytes and natural killer (type of lymphocytes) in the blood as well as macrophages in tissues can phagocytose and destroy microbes. (iv) Cytokine barriers- virus-infected cells secrete proteins called interferons which protect non-infected cells from further viral infection. Allergy is due to the release of chemicals like histamine and serotonin from the mast cells. The use of drugs like anti-histamine, adrenalin and steroids quickly reduce the symptoms of allergy. Drugs like barbiturates, amphetamines, benzodiazepines, and other similar drugs, that are normally used as medicines to help patients cope with mental illnesses like depression and insomnia, are often abused.

Which one of the followings is not the example of cellular barrier?
1. Leukocytes
2. Monocytes
3. Peyer's patches
4. Macrophages

Options 1. 1
2. 2
3. 3
4. 4

Q.42 Read the following passage carefully and answer the given questions.
Plasmodium, a tiny protozoan is responsible for the disease malaria. Different species of ***Plasmodium*** (***P. vivax, P. malaria*** and ***P. falciparum***) are responsible for different types of malaria. Of these, malignant malaria caused by ***Plasmodium falciparum*** is the most serious one and can even be fatal. Innate immunity consist of four types of barriers. These are — (i) Physical barriers- skin on our body is the main barrier which prevents entry of the micro-organisms. (ii) Physiological barriers- Acid in the stomach, saliva in the mouth, tears from eyes–all prevent microbial growth.

(iii) Cellular barriers- Certain types of leukocytes (WBC) of our body like polymorpho-nuclear leukocytes (PMNL-neutrophils) and monocytes and natural killer (type of lymphocytes) in the blood as well as macrophages in tissues can phagocytose and destroy microbes. (iv) Cytokine barriers- virus-infected cells secrete proteins called interferons which protect non-infected cells from further viral infection. Allergy is due to the release of chemicals like histamine and serotonin from the mast cells. The use of drugs like anti-histamine, adrenalin and steroids quickly reduce the symptoms of allergy. Drugs like barbiturates, amphetamines, benzodiazepines, and other similar drugs, that are normally used as medicines to help patients cope with mental illnesses like depression and insomnia, are often abused.

Malignant malaria is caused by _____ is the most serious one and can even be fatal.

1. *Plasmodium gigantica*
2. *Plasmodium malaria*
3. *Plasmodium vivax*
4. *Plasmodium falciparum*

Options 1. 1

2. 2

3. 3

4. 4

Q.43 Read the following passage carefully and answer the given questions.
Plasmodium, a tiny protozoan is responsible for the disease malaria. Different species of *Plasmodium* (*P. vivax, P. malaria* and *P. falciparum*) are responsible for different types of malaria. Of these, malignant malaria caused by *Plasmodium falciparum* is the most serious one and can even be fatal. Innate immunity consist of four types of barriers. These are — (i) Physical barriers- skin on our body is the main barrier which prevents entry of the micro-organisms. (ii) Physiological barriers- Acid in the stomach, saliva in the mouth, tears from eyes–all prevent microbial growth. (iii) Cellular barriers- Certain types of leukocytes (WBC) of our body like polymorpho-nuclear leukocytes (PMNL-neutrophils) and monocytes and natural killer (type of lymphocytes) in the blood as well as macrophages in tissues can phagocytose and destroy microbes. (iv) Cytokine barriers- virus-infected cells secrete proteins called interferons which protect non-infected cells from further viral infection. Allergy is due to the release of chemicals like histamine and serotonin from the mast cells. The use of drugs like anti-histamine, adrenalin and steroids quickly reduce the symptoms of allergy. Drugs like barbiturates, amphetamines, benzodiazepines, and other similar drugs, that are normally used as medicines to help patients cope with mental illnesses like depression and insomnia, are often abused.

Which one of the following drugs or chemicals can not quickly reduce the symptoms of allergy?

1. Anti-histamine
2. Adrenalin
3. Serotonin
4. Steroids

Options 1. 1

2. 2

3. 3

4. 4

Q.44 Read the following passage carefully and answer the given questions.
Plasmodium, a tiny protozoan is responsible for the disease malaria. Different species of *Plasmodium* (*P. vivax, P. malaria* and *P. falciparum*) are responsible for different types of malaria. Of these, malignant malaria caused by *Plasmodium falciparum* is the most serious one and can even be fatal. Innate immunity consist of four types of barriers. These are — (i) Physical barriers- skin on our body is the main barrier which prevents entry of the micro-organisms. (ii) Physiological barriers- Acid in the stomach, saliva in the mouth, tears from eyes–all prevent microbial growth. (iii) Cellular barriers- Certain types of leukocytes (WBC) of our body like polymorpho-nuclear leukocytes (PMNL-neutrophils) and monocytes and natural killer (type of lymphocytes) in the blood as well as macrophages in tissues can phagocytose and destroy microbes. (iv) Cytokine barriers- virus-infected cells secrete proteins called interferons which protect non-

infected cells from further viral infection. Allergy is due to the release of chemicals like histamine and serotonin from the mast cells. The use of drugs like anti-histamine, adrenalin and steroids quickly reduce the symptoms of allergy. Drugs like barbiturates, amphetamines, benzodiazepines, and other similar drugs, that are normally used as medicines to help patients cope with mental illnesses like depression and insomnia, are often abused.

Which one of the followings is not an example of physiological barriers?

1. Acid in the stomach
2. Interferons
3. Saliva in the mouth
4. Tears from eyes

Options 1. 1

2. 2

3. 3

4. 4

Q.45 Read the following passage carefully and answer the given questions.
Plasmodium, a tiny protozoan is responsible for the disease malaria. Different species of *Plasmodium* (*P. vivax, P. malaria* and *P. falciparum*) are responsible for different types of malaria. Of these, malignant malaria caused by *Plasmodium falciparum* is the most serious one and can even be fatal. Innate immunity consist of four types of barriers. These are — (i) Physical barriers- skin on our body is the main barrier which prevents entry of the micro-organisms. (ii) Physiological barriers- Acid in the stomach, saliva in the mouth, tears from eyes–all prevent microbial growth. (iii) Cellular barriers- Certain types of leukocytes (WBC) of our body like polymorpho-nuclear leukocytes (PMNL-neutrophils) and monocytes and natural killer (type of lymphocytes) in the blood as well as macrophages in tissues can phagocytose and destroy microbes. (iv) Cytokine barriers- virus-infected cells secrete proteins called interferons which protect non-infected cells from further viral infection. Allergy is due to the release of chemicals like histamine and serotonin from the mast cells. The use of drugs like anti-histamine, adrenalin and steroids quickly reduce the symptoms of allergy. Drugs like barbiturates, amphetamines, benzodiazepines, and other similar drugs, that are normally used as medicines to help patients cope with mental illnesses like depression and insomnia, are often abused.

Which one of the following drugs is not used as medicine to help patients cope with mental illnesses like depression and insomnia?

1. Barbiturates
2. Cocaine
3. Amphetamines
4. Benzodiazepines

Options 1. 1

2. 2

3. 3

4. 4

Q.46 Read the following passage carefully and answer the given questions.
Bioactive molecule, cyclosporin A, that is used as an immunosuppressive agent in organ-transplant patients, is produced by the fungus *Trichoderma polysporum*. Statins produced by the yeast *Monascus purpureus* have been commercialised as blood-cholesterol lowering agents. It acts by competitively inhibiting the enzyme responsible for synthesis of cholesterol. Baculoviruses are pathogens that attack insects and other arthropods. The majority of baculoviruses used as biological control agents are in the genus Nucleopolyhedrovirus. These viruses are excellent candidates for species-specific, narrow spectrum insecticidal applications. They have been shown to have no negative impacts on plants, mammals, birds, fish or even on non-target insects. BOD refers to the amount of the oxygen that would be consumed if all the organic matter in one liter of water were oxidised by bacteria. The sewage water is treated till the BOD is reduced. Cheese, is one of the oldest food items in which microbes were used. Different varieties of cheese are known by their characteristic texture, flavour and taste. For example, the large holes in 'Swiss cheese' are due to production of a large amount of CO_2 by a bacterium named *Propionibacterium sharmanii*.

Bioactive molecule, cyclosporin A, that is used as an immunosuppressive agent in organ-transplant patients, is produced by the fungus –

1. ***Monascus purpureus***
2. ***Saccharomyces cerevisiae***
3. ***Trichoderma polysporum***
4. ***Aspergillus niger***

Options 1. 1

2. 2

3. 3

4. 4

Q.47 **Read the following passage carefully and answer the given questions.**
Bioactive molecule, cyclosporin A, that is used as an immunosuppressive agent in organ-transplant patients, is produced by the fungus *Trichoderma polysporum*. Statins produced by the yeast *Monascus purpureus* have been commercialised as blood-cholesterol lowering agents. It acts by competitively inhibiting the enzyme responsible for synthesis of cholesterol. Baculoviruses are pathogens that attack insects and other arthropods. The majority of baculoviruses used as biological control agents are in the genus Nucleopolyhedrovirus. These viruses are excellent candidates for species-specific, narrow spectrum insecticidal applications. They have been shown to have no negative impacts on plants, mammals, birds, fish or even on non-target insects. BOD refers to the amount of the oxygen that would be consumed if all the organic matter in one liter of water were oxidised by bacteria. The sewage water is treated till the BOD is reduced. Cheese, is one of the oldest food items in which microbes were used. Different varieties of cheese are known by their characteristic texture, flavour and taste. For example, the large holes in 'Swiss cheese' are due to production of a large amount of CO_2 by a bacterium named *Propionibacterium sharmanii*.

The greater the BOD of waste water-

1. **The more is its polluting potential**
2. **The less is its polluting potential**
3. **The greater will be the oxygen**
4. **The lesser will be the methane gas**

Options 1. 1

2. 2

3. 3

4. 4

Q.48 **Read the following passage carefully and answer the given questions.**
Bioactive molecule, cyclosporin A, that is used as an immunosuppressive agent in organ-transplant patients, is produced by the fungus *Trichoderma polysporum*. Statins produced by the yeast *Monascus purpureus* have been commercialised as blood-cholesterol lowering agents. It acts by competitively inhibiting the enzyme responsible for synthesis of cholesterol. Baculoviruses are pathogens that attack insects and other arthropods. The majority of baculoviruses used as biological control agents are in the genus Nucleopolyhedrovirus. These viruses are excellent candidates for species-specific, narrow spectrum insecticidal applications. They have been shown to have no negative impacts on plants, mammals, birds, fish or even on non-target insects. BOD refers to the amount of the oxygen that would be consumed if all the organic matter in one liter of water were oxidised by bacteria. The sewage water is treated till the BOD is reduced. Cheese, is one of the oldest food items in which microbes were used. Different varieties of cheese are known by their characteristic texture, flavour and taste. For example, the large holes in 'Swiss cheese' are due to production of a large amount of CO_2 by a bacterium named *Propionibacterium sharmanii*.

Baculoviruses are -

1. **Pests**
2. **Biological control agents**
3. **Pathogens**
4. **Insects**

Options 1. 1

2. 2

3. 3

4. 4

Q.49 **Read the following passage carefully and answer the given questions.**
Bioactive molecule, cyclosporin A, that is used as an immunosuppressive agent in organ-transplant patients, is produced by the fungus *Trichoderma polysporum*. Statins produced by the yeast *Monascus purpureus* have been commercialised as blood-cholesterol lowering agents. It acts by competitively inhibiting the enzyme responsible for synthesis of cholesterol. Baculoviruses are pathogens that attack insects and other arthropods. The majority of baculoviruses used as biological control agents are in the genus Nucleopolyhedrovirus. These viruses are excellent candidates for species-specific, narrow spectrum insecticidal applications. They have been shown to have no negative impacts on plants, mammals, birds, fish or even on non-target insects. BOD refers to the amount of the oxygen that would be consumed if all the organic matter in one liter of water were oxidised by bacteria. The sewage water is treated till the BOD is reduced. Cheese, is one of the oldest food items in which microbes were used. Different varieties of cheese are known by their characteristic texture, flavour and taste. For example, the large holes in 'Swiss cheese' are due to production of a large amount of CO_2 by a bacterium named *Propionibacterium sharmanii*.

***Propionibacterium sharmanii* is used for the production of –**

1. Roquefort cheese
2. Swiss Cheese
3. Wine
4. Toddy

Options 1. 1

2. 2

3. 3

4. 4

Q.50 **Read the following passage carefully and answer the given questions.**
Bioactive molecule, cyclosporin A, that is used as an immunosuppressive agent in organ-transplant patients, is produced by the fungus *Trichoderma polysporum*. Statins produced by the yeast *Monascus purpureus* have been commercialised as blood-cholesterol lowering agents. It acts by competitively inhibiting the enzyme responsible for synthesis of cholesterol. Baculoviruses are pathogens that attack insects and other arthropods. The majority of baculoviruses used as biological control agents are in the genus Nucleopolyhedrovirus. These viruses are excellent candidates for species-specific, narrow spectrum insecticidal applications. They have been shown to have no negative impacts on plants, mammals, birds, fish or even on non-target insects. BOD refers to the amount of the oxygen that would be consumed if all the organic matter in one liter of water were oxidised by bacteria. The sewage water is treated till the BOD is reduced. Cheese, is one of the oldest food items in which microbes were used. Different varieties of cheese are known by their characteristic texture, flavour and taste. For example, the large holes in 'Swiss cheese' are due to production of a large amount of CO_2 by a bacterium named *Propionibacterium sharmanii*.

Statins are produced by:

1. ***Trichoderma polysporum***
2. ***Saccharomyces cerevisiae***
3. ***Lactobacillus***
4. ***Monascus purpureus***

Options 1. 1

2. 2

3. 3

4. 4