CUET Biology Solved Paper-2023

Held on 25 May 2023

1. Which is known as 'Terror of Bengal'?
(a) Water Lilly (b) *Hydrilla*
(c) Water hyacinth (d) *Lantana*

2. Identify the organism which is a source of single cell protein and is grown on commercial scale.
(a) *Azotobacter* (b) *Rhizobium*
(c) *Azospirillum* (d) *Spirulina*

3. Match List I with List II

List I		List II
A. *Salmonella typhi*	i.	Common Cold
B. Rhino viruses	ii.	Typhoid
C. *Streptococcus pneumoniae*	iii.	Malaria
D. *Plasmodium vivax*	iv.	Pneumonia

Choose the correct answer from the options given below:
(a) A-II, B-IV, C-I, D-III (b) A-II, B-IV, C-III, D-I
(c) A-II, B-I, C-IV, D-III (d) A-I, B-II, C-III, D-IV

4. The organisation set up by the Indian Government to take decisions regarding the validity of GM research and the safety of introducing GM- organism is:
(a) Genetic Engineering Approval Committee (GEAC)
(b) Genetic Modification Approval Committee (GMAC)
(c) Indian Council of Agricultural Research (ICAR)
(d) All India Institute of Medical Sciences (AIIMS)

5. Select the correct statement/s from the following:
(A) Spermatogonia always undergo meiotic cell division.
(B) Primary spermatocytes divide by mitotic cell division.
(C) Secondary spermatocytes have 23 chromosomes and undergo second meiotic division
(D) Spermatozoa are transformed into spermatids.
Choose the correct answer from the options given below:
(a) A and C only (b) C only
(c) D only (d) B and C only

6. Arrange the following events in correct sequence.
A. Formation of zygote
B. Formation of blastocyst
C. Implantation
D. Formation of morula
Choose the correct answer from the options given below:
(a) A, D, B, C (b) A, B, D, C
(c) A, B, C, D (d) C, D, B, A

7. Which of the following statements are correct regarding decomposition?
A. Decomposition is largely oxygen-requiring process
B. The rate of decomposition is controlled by chemical composition of detritus and climatic factors
C. Dry and cold environment favour the decomposition
D. If detritus is rich in lignin and chitin, the decomposition rate is faster
Choose the correct answer from the options given below:
(a) A and B only (b) C and D only
(c) B and C only (d) A and D only

8. Match List I with List II

List-I		List-II
A. The primates with brain capacity of around 900 cc.	i.	Neanderthal man
B. The primates with brain capacity of 1400 cc and lived in east and central Asia	ii.	*Homo erectus*
C. The primates which arose in Africa and moved across continents and developed into distinct races	iii.	*Homo sapiens*
D. The primates with the brain capacities between 650-800 cc and probably did not eat meat	iv.	Australopithecines
	v.	*Homo habilis*

Choose the correct answer from the options given below:
(a) A-III, B-I, C-V, D-II (b) A-II, B-I, C-III, D-V
(c) A-I, B-IV, C-III, D-V (d) A-I, B-III, C-IV, D-II

9. Mature mRNA is a fully processed _____
(a) hnRNA (b) snRNA
(c) 28S RNA (d) 5srRNA

10. Inbreeding is carried out in animal husbandry because it:
(a) Increase hybrid vigour
(b) Improves the breed
(c) Increase heterozygosity
(d) Increase homozygosity

11. Which of the following metal cannot be recovered from manual recycling process of e-wastes?
(a) Gold (b) Mercury
(c) Copper (d) Nickel

12. $(p + q)^2 = p^2 + 2pq + q^2 = 1$ represents Hardy Weinberg equation. It is used in:
(a) Population genetics (b) Mendelian genetics
(c) Biometrics (d) Molecular genetics

13. Bt toxin produced by *Bacillus thuringiensis* is resistant to:
(a) Drought (b) Insects
(c) Nematodes (d) Viruses

14. The puffed up appearance of dough is due to the production of :
(a) Oxygen gas (b) CO_2 gas
(c) Ethyl alcohol (d) Pyruvic acid

15. Match List I with List II

LIST I (Drugs)	LIST II (Obtained from)
A. Heroin	i. Tobacco plant
B. Cannabinoids	ii. *Erythroxylum coca*
C. Cocaine	iii. *Cannabis sativa*
D. Nicotine	iv *Papaver somniferum*

Choose the correct answer from the options given below:
(a) A-I, B-II, C-III, D-IV (b) A-II, B-I, C-III, D-IV
(c) A-I, B-II, C-IV, D-III (d) A-IV, B-III, C-II, D-I

16. Which of the following is used to make the bacterial cell as 'Competent cell' to take up DNA?
(a) Carbonate ion (b) Calcium ion
(c) Sodium ion (d) Sulphate ion

17. In gel electrophoresis the separated DNA fragments can be visualised:
(a) In visible light
(b) In visible light with staining
(c) In UV radiation without staining
(d) In UV radiation after staining with ethidium bromide

18. Mammals are able to survive in Antarctica or in the Sahara Desert as they are
(a) Conformers (b) Partial regulators
(c) Regulators (d) Migrants

19. In some organisms, male has ZZ chromosomes and female has ZW chromosomes. This type of sex-determination is found in:
(a) *Drosophila* (b) Hen
(c) Cockroach (d) Snail

20. Threatened animals and plants are taken out from their natural habitat and placed in special settings, protected and given special care is
(a) In situ conservation
(b) Ex situ conservation
(c) Conservation in national park
(d) Conservation in biosphere

21. Sequence the following steps in formation of female gametophyte of flowering plants.
A. Cell walls are laid down.
B. Formation of seven cells with eight nuclei.
C. Meiosis in megaspore mother cell and formation of megaspore tetrad.
D. Functional megaspore undergoes three mitotic divisions, results in formation of eight nuclei.
Choose the correct answer from the options given below:
(a) A, D, C, B (b) A, C, B, D
(c) C, D, A, B (d) C, A, B, D

22. Methanogens do not produce :
(a) Carbon dioxide and Methane
(b) Methane and Hydrogen
(c) Hydrogen and Carbon dioxide
(d) Nitrogen and Oxygen

23. The method of producing thousands of plants through tissue culture is called as:
(a) Somaclones
(b) Micro-propagation
(c) Somatic hybridisation
(d) Vegetative propagation

24. Early Greek thinkers thought that units of life called spores were transferred to different planets including earth. Identify the term associated with the above.
(a) Abiogenesis
(b) Panspermia
(c) Spontaneous generation
(d) Biogenesis

25. Succession occurring after flood is:
(a) Hydrarch succession
(b) Primary succession
(c) Secondary succession
(d) Mesarch succession

26. Identify the gene which is effective against corn borer.
(a) *cryIAc* (b) *cryIAb*
(c) *cryIIAb* (d) z gene

27. Select the incorrect statements given below :
A. Methane and Carbon dioxide are green house gases.
B. The Montreal Protocol is associated with the control of emission of ozone depleting substances.
C. Use of incinerators is not crucial to dispose off hospital wastes.
D. Dobson units is used to measure water quality.
Choose the correct answer from the options given below:
(a) A and B (b) C and D
(c) A and C (d) B and D

28. Match List I with List II

List-I	List-I
A. Dominant trait of pod colour in garden pea	i. Polygenic traits
B. The physical association of two genes on a chromosome	ii. Pleiotropy
C. The traits generally controlled by three or more genes	iii. Yellow
D. When a single gene exhibit multiple phenotypic expression	iv. Linkage
	v. Green

Choose the correct answer from the options given below:
(a) A-III, B-II, C-I, D-V (b) A-II, B-III, C-V, D-I
(c) A-III, B-II, C-I, D-IV (d) A-V, B-IV, C-I, D-II

29. Match List-I with List-II

List-I	List-II
A. Down's syndrome	I. 44+XXY
B. Thalassemia	II. Autosomal recessive trait
C. Klinefelter's syndrome	III. 44+XO
D. Turner's Syndrome	IV. 45+XY/XX

Choose the correct answer from the options given below:
(a) A-IV, B-II, C-III, D-I (b) A-IV, B-II, C-I, D-III
(c) A-I, B-III, C-IV, D-II (d) A-II, B-IV, C-III, D-I

30. Select the organism which does not undergoes parthenogenesis.
(a) Honeybee (b) Rotifer
(c) Turkey (d) Fruit fly

31. Which of the following is a hormone releasing IUD?
(a) Multiload 375 (b) LNG-20
(c) Cervical Cap (d) Vault

32. The correct sequence of steps involved in polymerase chain reaction (PCR) are:
A. DNA polymerase is used to extends the primers using oligonucleotides.
B. Desired DNA fragments are denatured.
C. Amplified fragments are ligated with the vector for cloning.
D. Oligonucleotides are added
Choose the correct answer from the options given below:
(a) C, A, B, D (b) A, C, B, D
(c) A, D, B, C (d) B, D, A, C

33. Biofertilisers are the organisms that enrich the nutrient quality of the soil. Which of the following is not a source of biofertiliser?
(a) Bacteria (b) Fungi
(c) Baculoviruses (d) Cyanobacteria

34. Identify the statement which do not hold true for Deoxyribose Nucleic Acid.
A. Only purine bases are present in DNA.
B. Deoxyribose sugar is present
C. A nitrogenous base is linked to the 1'C pentose sugar through N-glycosidic linkage.
D. Phosphate group is linked to OH of 4'C of a nucleotide.
Choose the correct answer from the options given below:
(a) A and D only (b) A and B only
(c) C and D only (d) B and C only

35. In which process unusual nucleotide (methyl guanosine triphosphate) is added to the 5' end of hnRNA.
(a) Splicing (b) Capping
(c) Tailing (d) Transcription factor

36. Match List I with List II

LIST I	LIST II
A. Wheat	I. Perisperm
B. Black pepper	II. Polyembryony
C. Cashew	III. Albuminous seed
D. Citrus	IV. False fruits

Choose the correct answer from the options given below:
(a) A-III, B-II, C-I, D-IV (b) A-II, B-I, C-III, D-IV
(c) A-III, B-I, C-IV, D-II (d) A-I, B-II, C-IV, D-III

37. Which forest also known as the 'lungs of the planet earth'?
(a) Amazon rain forest
(b) Rain forest of north-east India
(c) Tiaga forest
(d) Tundra forest

38. Match List I with List II.

LIST I	LIST II
A. Tubectomy	I. Barrier method
B. Copper ions	II Surgical method of sterilisation in human male
C. Cervical Cap	III. Surgical method of sterilisation in human female
D. Vasectomy	IV. Suppress motility of sperms

Choose the correct answer from the options given below:
(a) A-III, B-IV, C-I, D-II (b) A-III, B-I, C-IV, D-II
(c) A-II, B-I, C-IV, D-III (d) A-IV, B-II, C-III, D-I

39. Identify the equation representing logistic growth of a population.
(a) $\frac{dN}{dt} = rN\left(\frac{K-N}{K}\right)$ (b) $\frac{dN}{dt} = rN$
(c) $\frac{dN}{dt} = N\left(\frac{N-K}{K}\right)$ (d) $\frac{dN}{dt} = rN$

40. Select the statements which **do not** hold true for Cancer:
A. Cancerous cells show a property of contact inhibition.
B. Metastasis is the most feared property of malignant tumors.
C. Malignant tumor cells invade and damage the surrounding tissue.
D. Malignant tumor cells grows slowly.
Choose the correct answer from the options given below:
(a) A and B only (b) B and C only
(c) A and D only (d) B and D only

41. **Read the passage and answer the question given below.**
When a host is exposed to antigens, which may be in the form of living or dead microbes or other proteins, antibodies are produced in the host body. This type of immunity is called **active immunity**. Active immunity is slow and takes time to give its full effective response. Injecting the microbes deliberately during immunisation or infectious organisms gaining access into body during natural infection induce active immunity. When antibodies are directly given to protect the body against foreign agents, it is called **passive immunity**.
Colostrum secreted by mother during initial stage of lactation provided passive immunity as it is rich in
(a) Placental lactogen (b) Prolactin
(c) Antigen (d) IgA antibodies

42. **Read the passage and answer the question given below.**
When a host is exposed to antigens, which may be in the form of living or dead microbes or other proteins, antibodies are produced in the host body. This type of immunity is called **active immunity**. Active immunity is slow and takes time to give its full effective response. Injecting the microbes deliberately during immunisation or infectious organisms gaining access into body during natural infection induce active immunity. When antibodies are directly given to protect the body against foreign agents, it is called **passive immunity**.
Which of the following is passive immunisation?
(a) injecting inactivated pathogens
(b) injecting antigenic preparation
(c) injecting preformed antibodies
(d) injected weakened pathogens

43. **Read the passage and answer the question given below.**
When a host is exposed to antigens, which may be in the form of living or dead microbes or other proteins, antibodies are produced in the host body. This type of immunity is called **active immunity**. Active immunity is slow and takes time to give its full effective response. Injecting the microbes deliberately during immunisation or infectious organisms gaining access into body during

natural infection induce active immunity. When antibodies are directly given to protect the body against foreign agents, it is called **passive immunity**.

Immunity provided to the foetus from the mother through placenta during pregnancy is:

(a) Active immunity (b) Passive immunity
(c) Non-specific immunity (d) Innate immunity

44. Read the passage and answer the question given below.

When a host is exposed to antigens, which may be in the form of living or dead microbes or other proteins, antibodies are produced in the host body. This type of immunity is called **active immunity**. Active immunity is slow and takes time to give its full effective response. Injecting the microbes deliberately during immunisation or infectious organisms gaining access into body during natural infection induce active immunity. When antibodies are directly given to protect the body against foreign agents, it is called **passive immunity**.

Production of antibodies against antigens in the body is:

(a) Innate immunity
(b) Passive immunity
(c) Active immunity
(d) Non-Specific immunity

45. Read the passage and answer the question given below.

When a host is exposed to antigens, which may be in the form of living or dead microbes or other proteins, antibodies are produced in the host body. This type of immunity is called **active immunity**. Active immunity is slow and takes time to give its full effective response. Injecting the microbes deliberately during immunisation or infectious organisms gaining access into body during natural infection induce active immunity. When antibodies are directly given to protect the body against foreign agents, it is called **passive immunity**.

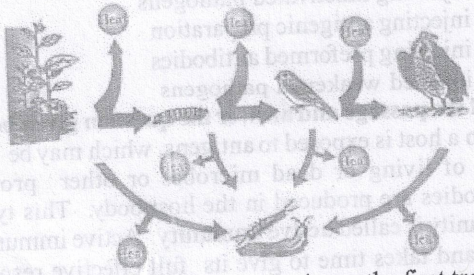
Match List I with List II

	List I		List II
A	Physical Barrier	I	Saliva
B	Cellular Barrier	II	Interferons
C	Physiological Barrier	III	Skin
D	Cytokine Barrier	IV	Polymorphonuclear leukocytes

Choose the correct answer from the options given below:

(a) A-III, B-I, C-II, D-IV (b) A-III, B-IV, C-I, D-II
(c) A-I, B-IV, C-III, D-II (d) A-IV, B-I, C-III, D-II

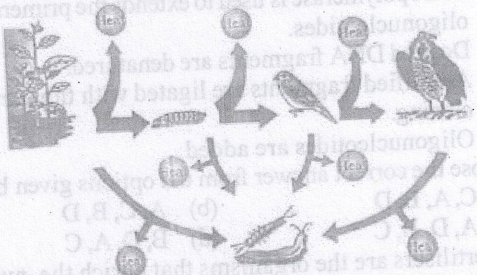
46. Observe the diagram and answer the question given below.



Which of the following constitutes the first trophic level?

(a) Plants (b) Herbivores
(c) Carnivores (d) Omnivores

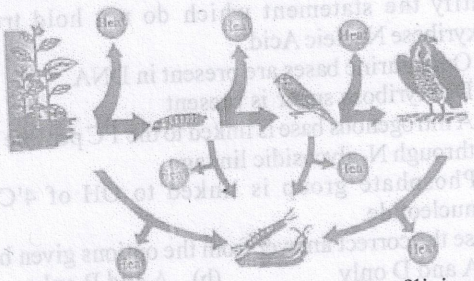
47. Observe the diagram and answer the question given below.



Sparrow comes under which of the following categories:

(a) Producers (b) Primary consumers
(c) Secondary consumers (d) Tertiary consumers

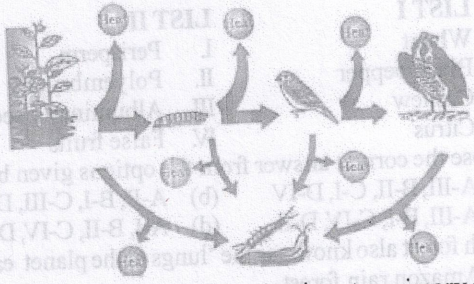
48. Observe the diagram and answer the question given below.



Each trophic level has a certain mass of living material at a particular time called as:

(a) Standing crop (b) Living crop
(c) Standing life (d) Time crop

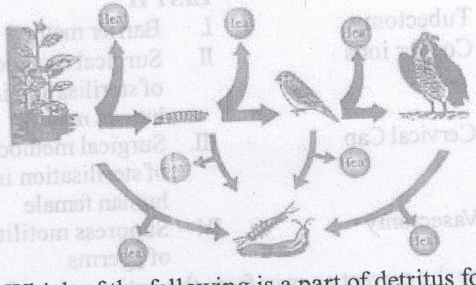
49. Observe the diagram and answer the question given below.



Which among the following is not a primary consumer?

(a) Snake (b) Grasshopper
(c) Zooplankton (d) Caterpillar

50. Observe the diagram and answer the question given below.



Which of the following is a part of detritus food chain?

(a) Earthworm (b) Birds
(c) Man (d) Snake

Hints & Explanations

1. **(c)** Water hyacinth is known as ' Terror of Bengal'. It is an aquatic plant which is one of the most invasive weeds found growing wherever there is standing water. It drains oxygen from the water which leads to death of fishes.

2. **(d)** *Spirulina* are being grown on an industrial scale as source of good protein. They can be grown easily on materials like waste water from potato processing plants, straw, molasses, animal manure and even sewage to produce large quantities and can serve as food rich in protein, minerals, fats, carbohydrate and vitamins.

3. **(c)**
   - *Salmonella typhi* is a pathogenic bacterium which causes typhoid fever in human beings.
   - Rhino viruses cause one of the most infectious human ailments know as the common cold.
   - *Streptococcus pneumoniae* are a type of bacteria that are responsible for the disease pneumonia in humans which infects the alveoli (air filled sacs) of the lungs.
   - *Plasmodium vivax* is a tiny protozoan that is responsible for malaria disease.

4. **(a)** Indian Government has set up organisations such as GEAC. The full form of GEAC is Genetic Engineering Approval Committee which will make decisions regarding the validity of GM research and the safety of introducing GM-organisms for public services.

5. **(b)** In the given statements only statement C is correct. Secondary spermatocytes, which have only 23 chromosomes each. The secondary spermatocytes undergo the second meiotic division to produce four equal, haploid spermatids.

6. **(a)** The correct sequence is Formation of zygote → Formation of morulan → Formation of Blastocyst → Implantation. So the correct sequence is A, D, B, C.

7. **(a)** In the given questions, statements A and B are correct. Statement C and D are incorrect.
   Correct statements are-
   - In a particular climatic condition, decomposition rate is slower if detritus is rich in lignin and chitin, and quicker, if detritus is rich in nitrogen and water-soluble substances like sugars.
   - Warm and moist environment favour decomposition whereas low temperature and anaerobiosis inhibit decomposition resulting in build up of organic materials.

8. **(b)**
   - The primates with brain capacity of around 900cc→ *Homo erectus*.
   - The primates with brain capacity of 1400cc and lived in East and Central Asia→ Neanderthal man.
   - The primates which arose in Africa and moved across continents and developed into distinct races→ *Homo sapiens*.
   - The primates with the brain capacities between 650-800cc and probably did not eat meat→ *Homo habilis*.

9. **(a)** The fully processed hnRNA is called mRNA.

10. **(d)** Inbreeding increases homozygosity so it is carried out in animal husbandary.

11. **(b)** E- wastes are exported to developed countries for the process of recycling in which copper, iron, silicon, nickel and gold are recovered. Mercury is not obtained during this process.

12. **(a)** $p^2 + 2pq + q^2 = 1$ is a binomial expansion of $(p + q)^2$. It is used to study the population genetics. Population genetics explains about the variation among the populations and the factors that are responsible for variations, adaptation, speciation, etc.

13. **(b)** Bt toxin produced by *Bacillus thuringiensis* is resistant to insects.

14. **(b)** The dough is used for making foods such as *dosa* and *idli* is also fermented by bacteria. During the process of fermentation the puffed-up appearance of dough occurs that is due to the production of CO_2 gas.

15. **(d)**
    Heroin → *Papaver somniferum*
    Cannabinoids → *Cannabis sativa*
    Cocaine → *Erythroxylum coca*
    Nicotine → Tobacco plant

16. **(b)** Calcium ion is used to make the bacterial cell as "Competent cell" because it increases the efficiency with which DNA enters the bacterium through pores in its cell wall.

17. **(d)** In gel electrophoresis the separated DNA fragments can be visualised only after staining the DNA with a compound known as ethidium bromide followed by exposure to UV radiation. Pure DNA fragments cannot be visualised in the visible light and without staining.

18. **(c)** Mammals are able to survive in Antarctica or in the Sahara Desert as they are regulators. Mammals have ability to maintain a constant body temperature according to climate so they live in Antarctica or in the Sahara desert.

19. **(b)** In hens, the total number of chromosome is same in both males and females but two different types of gametes in terms of the sex chromosomes, are produced by females, i.e., female heterogamety. In hens, the females have one Z and one W chromosome thus in hen male has ZZ chromosomes and female has ZW chromosomes.

20. **(b)** In *ex situ* conservation threatened animals and plants are taken out from their natural habitat and placed in special setting where they can be protected and given special care such as zoological parks, botanical gardens and wildlife safari parks.

21. **(c)** The correct sequence of formation of female gametophyte of flowering plants is- Meiosis in megaspore mother cell and formation of megaspore tetrad → Functional megaspore undergoes three mitotic divisions, results in the formation of eight nuclei → Cell walls are laid down → Formation of seven cells with eight nuclei.

22. **(d)** Such type of bacteria, which grow anaerobically on cellulosic material and produce large amount of methane along with CO_2 and H_2 are called Methanogens. These bacteria do not produce nitrogen and oxygen.

23. **(b)** The method by which thousands of plants are produced through tissue culture is called micro-propagation.

24. **(b)** The theory by which early Greek thinkers thought units of life called spores were transferred to different planets including earth is known as 'Panspermia'.

25. (c) The succession which begins in areas where natural biotic communities have been destroyed such as in abandoned farm lands, burned or cut forests, lands that have been flooded is known as secondary succession.

26. (b) Specific Bt toxin genes were isolated from *Bacillus thuringiensis* and incorporated into the several crop plants such as cotton. The choice of genes depends upon the crop and the targeted pest because most Bt toxins are insect-group specific. The protein encoded by the gene *cryIAb* controls corn borer.

27. (b) Statements C and D are incorrect. The correct statements are-
- The use of incinerators is crucial to disposal of hospital waste.
- Dobson unit is used to measure the thickness of the ozone in a column of air from the ground to the top of the atmosphere.

28. (d)
- Dominant trait of pod colour in garden pea → Green
- The physical association of two genes on a chromosomes → Linkage.
- The traits generally controlled by three or more genes → Polygenic traits
- When a single gene exhibit multiple phenotypic expression → Pleiotropy

29. (b)
- Down's syndrome → 45 + XY/XX
- Thalassemia → Autosomal recessive trait
- Klinefelter's syndrome → 44 + XXY
- Turners's syndrome → 44 + XO

30. (b) The phenomenon by which female gamete undergoes development to form new organisms without fertilisation is known as parthenogenesis. Organisms such as rotifers, honeybees, some lizards and birds (turkey) undergo parthenogenesis. Fruit fly does not undergoes parthenogenesis.

31. (b) LNG-20 is a type of hormone releasing IUD.

32. (d) The correct sequence of steps involved in polymerase chain reaction are-
Desired DNA fragments are denatured → Oligonucleotides are added → DNA polymerase is used to extends the primers using oligonucleotides → Amplified fragments are ligated with the vector for cloning.

33. (c) Biofertilisers are such type of organisms that enrich the nutrient quality of the soil. The main sources of biofertilisers are bacteria, fungi and cyanobacteria. Baculoviruses are not a source of biofertilisers.

34. (a) Statements A and D are incorrect. The correct statements are-
- Both purines and pyrimidines bases are present in DNA.
- In DNA, a phosphate group is linked to OH of 5′C of a nucleoside through phosphoester linkage.

35. (b) Capping is a process in which an unusual nucleotide (methyl guanosine triphosphate) is added to the 5′-end of hnRNA.

36. (c)
- Wheat → Albuminous seed
- Black pepper → Perisperm
- Cashew → False fruits
- Citrus → Polyembryony.

37. (a) Amazon rain forest also known as the 'lungs of the planet earth'.

38. (a)
- Tubectomy→ Surgical method of sterilization in human female
- Copper ions→ Suppress motility of sperms
- Cervical cap→ Barrier method
- Vasectomy → Surgical method of sterilisation in human male.

39. (a) Equation dN/dt= r N [K–N/K] represents logistic growth.

40. (c) Statements A and D are incorrect about cancer. Correct statements are-
- Normal cells show a property called contact inhibition by virtue of which contact with other cells inhibits their uncontrolled growth. Cancer cells appear to have lost contact inhibition property. As a result of this, cancerous cells just continue to divide giving rise to masses of cells called tumors.
- The malignant tumors cells grow very rapidly, invading and damaging the surrounding normal tissues.

41. (d) Colostrum is a yellowish fluid that is secreted by mother during the initial days of lactation has abundant antibodies (IgA) to protect the infant.

42. (c) When ready-made or preformed antibodies are directly given to protect the body against foreign agents then such type of immunity is known as passive immunity.

43. (b) Immunity provided by mother to the foetus is an example of passive immunity. The foetus receives preformed antibodies (IgA) from their mother, through the placenta during pregnancy.

44. (c) When a host is exposed to antigens, which may be in the form of living or dead microbes or other proteins, antibodies are produced in the host body. Such type of immunity is known active immunity.

45. (b)
- Physical Barrier → Skin
- Cellular Barrier → Polymorpho nuclear leukocytes
- Physiological Barrier → Saliva
- Cytokine Barrier → Interferons

46. (a) The given diagram shows the energy flow through different trophic level. In this diagram the first trophic level is constituted by plants.

47. (c) Sparrow in the diagram constitutes the third trophic level (primary carnivore) so it is a secondary consumer because it eats insects.

48. (a) In the given diagram each trophic level has certain mass of living material at a particular time that is known as standing crop. The standing crop is measured as the mass of living organisms (biomass) or the number in a unit area.

49. (a) The organisms that obtain their food from producers (plants or algae) are known as primary consumers (herbivores) such as grasshopper, zooplankton, caterpillar etc. Snakes are carnivorous (secondary or tertiary consumers) because they eat others animals thus snakes are not a primary consumer.

50. (a) The detritus food chain (DFC) begins with dead organic matter. Earthworms are detritivores because they eat detritus (made of dead organic matter). So earthworms are part of detritus food chain.