Techior Solutions Pvt. Ltd.

CBSE XII Biology Sample Paper

Total Time: 3 Hr | Total Marks: 70.0

Biology

Section A

MCQ Single Correct

1) For the MN-blood group system, the frequencies of M and N alleles are 0.7 and 0.3, respectively. The expected frequency of MN-blood group bearing organisms is likely to be **1.0**

- **A)** 42%
- **B)** 49%
- **C)** 9%
- **D)** 58%

2) **Assertion :** Big-bang theory is based on studies of Sir James Jeans. **1.0**
Reason : He gave the theory of steady state.

- **A)** If both Assertion and Reason are true and Reason is the correct explanation of Assertion
- **B)** If both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- **C)** If Assertion is true but Reason is false
- **D)** If both Assertion and Reason are false

3) Assertion : Mendel was successful in his hybridization. **1.0**
Reason : Garden pea proved ideal experimental material.

- **A)** If both Assertion and Reason are true and Reason is the correct explanation of Assertion
- **B)** If both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- **C)** If Assertion is true but Reason is false
- **D)** If both Assertion and Reason are false

4) What is the full form of MMR vaccine? **1.0**

- **A)** Mumps Measles Rabies
- **B)** Malignant Melanoma Rheumatism
- **C)** Measles Mumps Rubella
- **D)** Malignant-Malaria Rheumatoid

5) What is the average size of a microbe? **1.0**

- **A)** Less than 1 mm
- **B)** More than 1 cm
- **C)** Less than 0.1 mm
- **D)** More than 0.1 mm

6) Plasmid DNA acts as _____ to transfer the piece of DNA attached to it into the host organism. **1.0**

- **A)** protein
- **B)** carrier
- **C)** vector
- **D)** antibody

7) What is the fate of the polar body produced during meiosis I in oogenesis? **1.0**

- **A)** It disintegrates and is reabsorbed by the body
- **B)** It undergoes meiosis II to form another polar body
- **C)** It remains attached to the egg and contributes to its development
- **D)** It matures into a functional egg cell

8) Which structure is responsible for producing a thick, milky fluid that nourishes and activates sperm? **1.0**

- **A)** Seminal vesicle
- **B)** Prostate gland
- **C)** Bulbourethral gland
- **D)** Epididymis

9) What do the alveoli secrete? **1.0**

- **A)** Bile
- **B)** Hemoglobin
- **C)** Milk
- **D)** Sweat

10) Which type of cancer affects the blood cells? **1.0**

- **A)** Pancreatic cancer
- **B)** Leukemia
- **C)** Colon cancer
- **D)** Bladder cancer

11) ADA deficiency is caused due to _____ of the gene for adenosine deaminase. **1.0**

- **A)** addition
- **B)** change
- **C)** deletion
- **D)** multiplication

12) What is the reflex that leads to the expulsion of baby called? **1.0**

- **A)** Feet withdrawal reflex
- **B)** Knee jerk reflex
- **C)** Fetal ejection reflex
- **D)** Oxytocin reflex

13) Label the part marked as 2. **1.0**

A) Epididymis
B) Corpus epididymis
C) Vas deferens
D) Vasa efferentia

14) What is the full form of SCID? **1.0**

A) Severe Combined Immunodeficiency
B) Sarcolemma Infected Disease
C) Septic Infectious diseases
D) Seven Convoluted Immunity disorder

15) Sense and antisense RNA forms _____ **1.0**

A) ds RNA
B) ss RNA
C) ds DNA
D) ss DNA

16) In how many stages the treatment of waste-water in STPs is carried out? **1.0**

A) One
B) Two
C) Three
D) Four

Section B

Short Description

17) What is the advantage of Saheli? Who prepared Saheli? **2.0**

18) Name the source of statin and state its action on the human body. **2.0**

19) What is vaccine? Give an example of a vaccine produced by recombinant DNA technology. **2.0**

20) A recombinant DNA is formed when sticky ends of vector DNA and foreign DNA join. Explain how the sticky ends are formed and get joined? **2.0**

---OR---

Can you list 10 recombinant proteins which are used in medical practice? Find out where they are used as therapeutics.

21) Name the source of cyclosporine - A. How does this bioactive molecule function in our body? **2.0**

Section C

Medium Description

22) Name and explain the two types of immune responses in humans. **3.0**

---OR---

How does the transmission of each of the following diseases take place?
(a) Amoebiasis (b) Malaria (c) Ascariasis (d) Pneumonia

23) Explain the origin of simple organic compounds on the primitive earth. **3.0**

---OR---

State Hardy-Weinberg Principle and give the algebraic equation for the distribution of genotypes.

24) With the help of an example, differentiate between incomplete dominance and co-dominance. **3.0**

25) What is a biogeochemical cycle? What is the role of the reservoir in a biogeochemical cycle? Give an example of a sedimentary cycle with reservoir located in earth's crust. **3.0**

26) Explain the various steps involved in the production of artificial insulin. **3.0**
Or
Explain how Eli Lilly, an American company, produced insulin by recombinant DNA technology.

27) What is the use of aeration tank in the treatment of sewage? **3.0**

28) Define seed dormancy. Give the causes and significance of seed dormancy. **3.0**

Section D

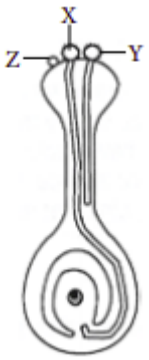
Case Study

Solve Question 29 to Question 32 based on the following paragraph:

Case Study 2:

Read the following passage and answer the questions:

Cross pollination is the transfer of pollen grains from the anther of a one flower to the stigma of a genetically different flower. It is performed with the help of an external agency which may be abiotic (e.g., wind, water) or biotic (e.g., insects, birds, bats, snails). The diagram shows the carpel of an insect pollinated flower.



29) Pollination of a flower in which the pollen is carried by an insect is called **1.0**

- **A)** anemophily
- **B)** ornithophily
- **C)** entomophily
- **D)** malacophily

30) What is the most likely reason for non germination of pollen grain Z? **2.0**

- **A)** Pollen grains X and Y were brought to the stigma earlier, therefore, their germination inhibited the germination of pollen grain Z
- **B)** Pollen grain Z was brought to the flower by wind, while pollen grains X and Y were brought to the flower by insect
- **C)** Pollen grain Z lacks protrusions that allow it to adhere properly onto the stigma surface
- **D)** Pollen grain Z comes from a flower of an incompatible species

31) Which of the following best describes the function of the pollen tube? **1.0**

- **A)** It acts as a conduit to transport male gametes from the anther to the ovule
- **B)** It acts as a conduit to transport male gametes from the stigma to the ovule
- **C)** It contains key nutrients that serve to nourish the newly-formed zygote
- **D)** It digests the tissues of the stigma, style and ovary

---OR---

Pollenkitt is generally found in

A) anemophilous flowers
B) entomophilous flowers
C) ornithophilous flowers
D) malacophilous flowers

32) Refer to the given characteristics of some flowers. **1.0**

A. The stamens hang out of the flower, exposing the anthers to the wind.

B. The pollen grains are tiny and light.

C. The flower has a sweet scent.

D. The flower petals are brightly coloured .

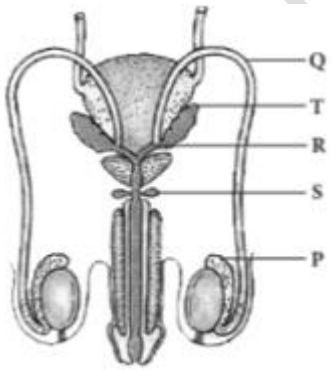
How many of the above characteristics are of insect-pollinated flower?

A) One
B) Two
C) Three
D) Four

Solve Question 33 to Question 36 based on the following paragraph:
Case Study 1 :

Read the following passage and answer the questions:

Human male reproductive system comprises of a pair of testes, primary sex organs associated with formation of gametes and production of sex hormone. Study the given figure of human male reproductive system and answer the following questions.



33) Which of the following is correct for labelled part P? **1.0**

A) P is rete testis which transports sperms to outside

B) P is epididymis which secretes fluid that nourish the sperms

C) P is epididymis that carry sperms and secretion of seminal vesicles

D) P is rete testis which lies along inner side of each testis and stores the sperms

---OR---

Which structure passes through the prostate gland and carries sperms and secretion of seminal vesicle?

A) P

B) T

C) S

D) R

34) Identify the correctly matched pair **1.0**

A) Q-Vasa efferentia

B) R-Ejeculatory duct

C) S - Seminal vesicle

D) T - Cowper's gland

35) Which statement is incorrect for Q? **2.0**

A) It carries spermatozoa from epididymis to ejaculatory duct

B) Q are only 2 in number

C) It arises from rete testis

D) It constitutes male sex accessory duct

36) Which structure passes through the prostate gland and carries sperms and secretion of seminal vesicle? **1.0**

A) P

B) T

C) S

D) R

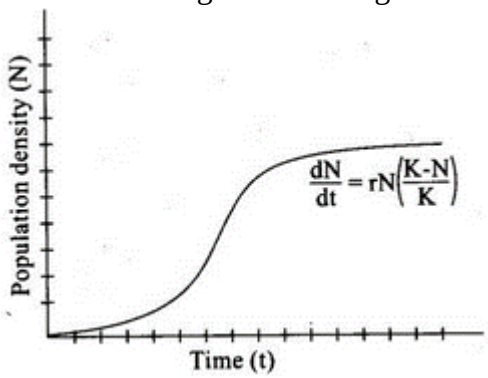
Section E

Long Description

37) An individual and a population has certain characteristics. Name these attributes with definitions. **5.0**

---OR---

Comment on the growth curve given below.



38) What are the two main components of an ecosystem? Describe the physical factors which affect the distribution of organisms in different habitats. **5.0**

---OR---

Define ecological pyramid and describe pyramids of number and biomass.
Or
Construct a pyramid of biomass starting with phytoplankton. Label three trophic levels. Is the pyramid upright or inverted? Why?

39) Discuss the characteristics of India's biodiversity. **5.0**

---OR---

Give a brief account of the loss of biodiversity at the global level.