

2025 SUPER MOCK 1 – BIOLOGY

PAPER 1

50 minutes

[50 marks]

Answer **all** the questions.

Each question is followed by **four** options lettered **A** to **D**. Find out the correct option for **each** question and shade **in pencil** on your answer sheet, the answer space which bears the same letter as the option you have chosen. Give only **one** answer to **each** question.

Think carefully before you shade the answer spaces; erase completely any answers you which to change. Do all rough work on this question paper. Now answer the following questions.

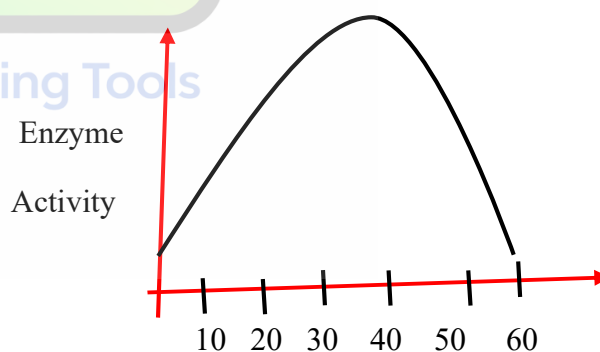
- The sequence of amino acid in a developing protein chain in a cell is determined by
 - mRNA
 - ribosome
 - RNA – polymerase
 - tRN
- Leaves of *Nymphaea* float on water surface because the
 - Stem is not rooted in the bed of the water body
 - Petiole contains numerous lacunae
 - Petioles are very long and flexible
 - Upper surfaces are covered with waxy cuticle
- Which of the following pairs of structures in a tadpole disappears before the adult stage?
 - Cement glands and external gills
 - External gills and internal gills
 - Tail and external gills
 - Tail and internal gills
- A characteristic feature of plant parasite is the
 - possession of holdfast
 - possession of rhizoids
 - development of hanging roots
 - development of haustoria
- Which of the following is used to collect small insects from soil, leaf litter and crevices?
 - pooter
 - quadrat
 - sweep net
 - drag net
- If 80 grasshoppers are found in a field with a total area of 100m². What is the population density?
 - 0.08 per m²
 - 0.8 per m²
 - 80 per m²
 - 100 per m²
- Which of the following is not a living partially – permeable membrane?
 - Sheet of cellophane
 - Yam tuber
 - Unripe pawpaw fruit
 - Pig's bladder
- The population density of fast-moving animals can be determined by
 - Capture – release – recapture method
 - Direct observation
 - Gut examination
 - Line transect method

9. Global warming is mostly caused by concentration of
- CO
 - CO₂
 - CFCs
 - NO
10. During replication of the molecule, it
- Unzip, unwind and separate
 - Unzip, separate
 - Unwind, unzip and separate
 - Untwist, separate and zip
11. The most stable community of a biome during succession is referred to as
- Climax community
 - Hydrach community
 - Pioneer community
 - Sere community
12. *Crossing over* and *chiasmata* occur during
- Prophase I and anaphase II of meiotic division
 - Metaphase II and Telophase I of meiotic division
 - Prophase I and metaphase I of meiotic division
 - Interphase and prophase of mitosis
13. DNA replication occurs in a cell during
- Interphase of mitosis
 - Metaphase of meiosis I
 - Anaphase of mitosis
 - Prophase of mitosis
14. The failure of homologous chromosomes to separate during meiosis is known as
- Crossing over
 - Non – disjunction
 - Synapsis
 - Transcription

15. The cytoplasm of a maize plant contains all the following structures except
- Plasma membrane
 - Chloroplast
 - Ribosome
 - Golgi body
16. The part of the brain that which controls body temperature is the
- Hypothalamus*
 - Cerebrum
 - Cerebellum
 - Medulla oblongata
17. The part of the brain that controls balance of posture is
- Cerebrum
 - Cerebellum
 - Medulla oblongata
 - Hypothalamus

The graph below shows the effect of temperature on the activity of an enzyme.

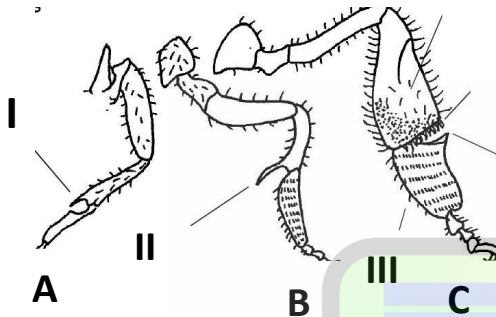
Use it to answer Questions 19 and 20



18. At 60 °C, the enzyme is
- Denatured
 - Reactivated
 - Deaminated
 - Saturated

19. At what temperature is the enzyme most active?
- 35°C
 - 40°C
 - 55°C
 - 25°C

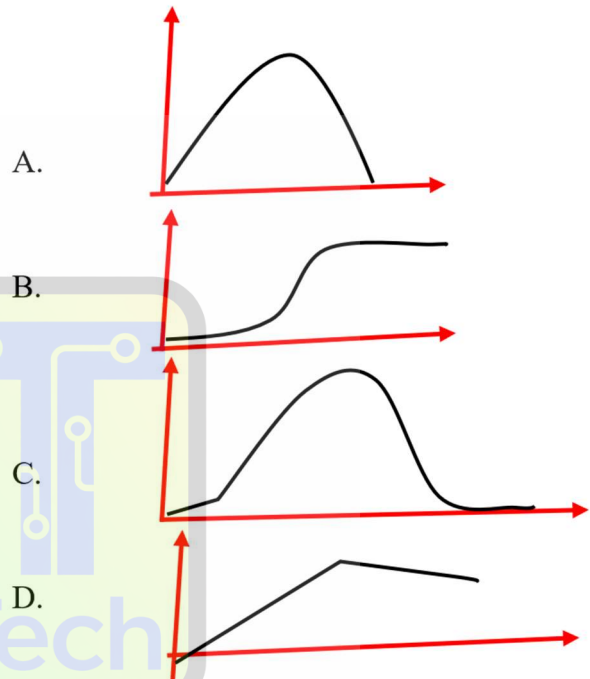
The diagrams below represent the legs of honey bee, study them carefully and answer questions 21 and 22.



20. The part labeled I is the
- The Prong
 - The pollen basket
 - The pollen brush
 - The comb
21. The part labeled that is used for cleaning the head, proboscis and antenna is
- I
 - II
 - III
 - IV
22. The type of erosion caused by rain drops is known as
- Gully erosion
 - Rill erosion
 - Sheet erosion
 - Splash erosion
23. Given that the population size of Asamankese town in 2024 was 25000. If the number of new born babies in that was 3000, calculate the birth rate of the year.

- 140 per thousand per year
- 120 per thousand per year
- 110 per thousand per year
- 100 per thousand per year

24. Which of the following curves represents that population growth is density dependent?



25. The population density of a plant species is 9.08 plants/m². if quadrat of area 1m² was tossed 12 times. Determine the population of the species to nearest whole number
- 109.
 - 108
 - 107
 - 106
26. What is the probability of producing a child of blood group O by a woman of blood group O and a man of blood AB?
- 0%
 - 25%
 - 50%
 - 75%

27. The substance which is regenerated at the end of the Krebs's cycle is a
- 2 – carbon compound
 - 3 – carbon compound
 - 4 – carbon compound
 - 6 – carbon compound
28. The following are directly involved in transmission of sound waves to the brain except
- Ear drum
 - Auditory meatus
 - Auditory ossicles
 - Eustachian tube
29. The theory of evolution as proposed by Lamarck is
- Inheritance of acquired characteristics
 - Natural selection
 - Origin of species through mutation
 - Survival of the fittest
30. Which of the following traits is a sex – linked?
- Albinism
 - Colour blindness
 - Night blindness
 - Tongue rolling
31. The pituitary gland is referred to as the “master gland” because
- It secretes a host of hormones
 - It secretes growth hormones
 - Its hormones may cause gigantism
 - It controls the other members of the endocrine system
32. A newly developed variety of rice has a chromosome number of 12 in the zygote. What will the chromosome number of its endosperm be?
- 6
 - 12
 - 18
 - 24
33. Corpus luteum refers to
- A developing mammalian egg
 - A structure which provides nutrients for a fertilized ovum
 - A left – over Graafian follicle after the egg has been released
 - The structure in the ovary which produces oestrogen
34. Rhizomes are used in vegetative propagation because they
- Contain food reserves
 - Have adventitious roots
 - Have buds
 - Are protected by scale leaves
35. During exhalation in mammals the
- Diaphragm flattens
 - Ribs move outwards
 - Pressure in the thoracic cavity increases
 - Volume of the thoracic cavity increases
36. The food substance in egg albumen could be tested for by
- Benedict's solution
 - Fehling's solution
 - Million's reagent
 - Sudan III
37. Which of the following does not form part of the glomerular filtrate?
- Glucose
 - Amino acid
 - Fibrinogen
 - Urea

38. When a person steps accidentally on a hot object, they withdraw their legs quickly. This is an example of
- Co – ordinated action
 - Involuntary action
 - Reflex action
 - Voluntary action
39. The theory of the **use and disuse of body parts** was proposed by
- Darwin
 - Lamarck
 - Mendel
 - Wallace
40. A single gene mutation is referred to as
- Deletion
 - Duplication
 - Point mutation
 - Inversion
41. Which of the following constitutes discontinuous variation? The
- Height of students in class
 - Rhesus factor among blood donors
 - Skin colour in a family
 - Weight of students in class
42. How would an individual who is a carrier of haemophilia be represented?
- $X^H X^H$
 - $X^H Y$
 - $X^h Y$
 - $X^H X^h$
43. The phenotypic ratio of selfing of the offspring of a cross between homozygous tall and homozygous dwarf pea plant is
- 1:2:1
 - 2:1:1
 - 1:3
 - 3:1
44. Which of the following is a voluntary action?
- Salivation at the sight of food
 - The secretion on bile
 - Picking up an object
 - Sneezing
45. The heartbeat of mammal is controlled by the
- Sympathetic nervous system
 - Parasympathetic nervous system
 - Sino – arterial node
 - Purkinje tissue
46. The hepatic porta vein carries blood from the
- Heart to the liver
 - Colon to the liver
 - Ileum to the liver
 - Stomach to the ileum
47. The end - product of glycolysis is
- Acetyl CoA
 - Ethyl alcohol
 - Lactic acid
 - Pyruvate
48. The testis of a mammal is attached to the scrotal sac by the
- Epididymis
 - Gubernaculum
 - Sperm duct
 - Vas deferens
49. All the following are pyrimidine bases except
- Cytosine
 - Uracil
 - Adenine
 - Thymine
50. A group of four single homologous chromosomes that form bivalents in prophase 1 of meiotic division is
- Synapses
 - Tetrad
 - Allele
 - Chromatids