COMMON P. G. ENTRANCE TEST – 2024 (CPET-2024)

Test Booklet No. : 05891

Subject Code : 49

Hall Ticket No. :

Subject : ZOOLOGY

TEST BOOKLET

*Time Allowed : **60** Minutes*

*Full Marks : **80***

: INSTRUCTIONS TO CANDIDATES :

1. The Test Booklet contains **15** pages including the cover page and **80** (Question No. 1 to 80) multiple choice questions.
2. DO NOT break open the seal of the Test Booklet until the invigilator instructs to do so.
3. The candidates must check discrepancy, if any (like up-printed or torn or missing pages or missing questions) in the Test Booklet immediately after breaking the seal of the Test Booklet. If detected, the invigilator may be requested to replace the same.
4. Candidates are required to fill up and darken the **Hall Ticket No, Test Booklet Serial No.** and OMR Answer Sheet Serial No. in attendance sheet carefully. Wrongly filled in OMR Answer Sheet is liable for rejection.
5. Each question has four choices / answers marked (A), (B), (C), (D). Candidate has to select the most appropriate choice / answer to each question and darken the oval completely against the question number provided in the OMR Answer Sheet.
6. Indicate only one choice / answer from the options provided by darkening the appropriate oval in the OMR Answer Sheet. More than one response to a question shall be treated as a wrong answer.
7. Use only **Black Ball Point Pen** for darkening the oval for answering.
8. All the questions are compulsory and they carry equal marks. The total marks scored by a candidate depends on the number of correct choices / answers darkened in the OMR Answer Sheet. There will be no negative marking for wrong answers.
9. No candidate shall be allowed to leave the Examination Hall / Room till all OMR Answer Sheets have been collected by the invigilator.
10. On completion of the entrance test, the original OMR Answer Sheet be handed over to the invigilator. Candidates are allowed to take the second copy of the OMR Answer Sheet along with the used Test Booklet for reference.
11. Candidates are not allowed to carry any personal belongings including electronic devices such as scientific calculator, cell phones, headphones, earbuds, or any other type of devices that allow communication of any kind inside the Examination Room / Hall.
12. The candidates are advised not to scribble or make any mark on the OMR Answer Sheet except marking the answers at the appropriate places and filling up the details required. Rough work, if any, may be done in the blank sheet(s) provided at the end of the Test Booklet.
13. Any malpractice / use of unfair means will lead to your disqualification from the entrance test / admission process and may also lead to appropriate legal action as deemed fit.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

(Turn over)

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1. Black water fever is caused by :

(A) P.vivax (B) P.ovale

(C) P. falciparum (D) P. malariae

2. Euplectella belongs to which class of phylum porifera ?

(A) Demospongia (B) Hexactinellida

(C) Calcaria (D) Homoscleromorpha

3. The correct route followed by Ascaris in human body is :

(A) Gut – heart – liver – lungs – gut (B) Gut – liver – heart – trachea – gut

(C) Gut – liver – lungs – trachea – gut (D) Gut – liver – heart – lungs – gut

4. How many ATP molecules are needed to fix one molecule of Nitrogen ?

(A) 12 (B) 20

(C) 6 (D) 16

5. Which of the following survivorship curve is suitable for the organisms who breed several times during the course of their life span ?

(A) Type – I (B) Type – II

(C) Type – III (D) Type – IV

6. In ecological succession the climax community is best recognised by :

(A) $P = R$ (B) $P \neq R$

(C) $P > R$ (D) $P < R$

7. The empirical formula of Mean, Median and Mode is :

(A) Mean – Mode = 3 (Mean – Median)

(B) Mean = 3 Median – 2 Mode

(C) Mode – Mean = 3 (Median + Mean)

(D) Mean – Mode = 3 Mean – 2 Median

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8. Suppose a person has 8 red, 5 green, 12 orange and 15 blue balls. Test the null hypothesis that the colours of the balls occur with equal frequency. Find the Chi-square value :

(A) 5.6 (B) 5.68

(C) 5.9 (D) 5.8

9. How many stages are there in incomplete metamorphosis ?

(A) One (B) Two

(C) Three (D) Four

10. Which one of the following belongs to the class of sea hare ?

(A) Mussels (B) Aphrodite

(C) Snail (D) Sepia

11. In which class of echinodermata stalk is found for attachment with substratum ?

(A) Asteroidea (B) Echinoidea

(C) Ophiuroidea (D) Crinoidea

12. To produce 100 zygotes, the required number of meiosis is :

(A) 100 (B) 125

(C) 50 (D) 400

13. Which of the following is incorrect for ribosome subunits ?

(A) 30 S subunit is a complex of 16S rRNA and 19 proteins

(B) 50 S subunit is a complex of 5S and 23S rRNA and 31 proteins

(C) 40 S subunit is a complex of 18S rRNA and 33 proteins

(D) 60 S subunit is formed of 25S, 5S and 5.8S rRNA and 46 proteins

14. In humans there is significantly more constitutive heterochromatins found on chromosomes :

(A) 1, 9, 16, 19 and Y (B) 2, 3, 7, 9 and Y

(C) 1, 9, 12, 18, 17 and X (D) 2, 3, 7, 9, X and Y

15. In most somatic cells, centriole duplication occurs during :

(A) G_0 phase (B) G_1 phase

(C) S phase (D) Prophase

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16. Heart of which animal has two pacemakers ?

(A) Herdmania
(B) Asterias
(C) Balanoglossus
(D) Amphioxus

17. Type of fangs found in sea snakes :

(A) Solenoglyphous
(B) Proteroglyphous
(C) Ophisthoglyphous
(D) Pteroglyphous

18. The name of the mesozoic super continent that consisted of all the present continents is :

(A) Eurasia
(B) Laurasia
(C) Pangaea
(D) Gondwanaland

19. Which of the following is not correct ?

(A) The formula of spinal vertebra of human is $C_7\ T_{12}\ L_5\ S_5\ C_4$
(B) Mammalian pelvic girdle is formed of acetabular, ischium, pubis and ilium
(C) External ear, epiglottis contains elastic cartilage
(D) In intramembranous ossification bone develops by replacing hyaline cartilage

20. The type of epithelial cells that forms the stratum germinativum is :

(A) Cuboidal
(B) Ciliated
(C) Squamous
(D) Columnar

21. In excitation – contraction coupling :

(A) The muscle action potential propagates along the sarcolemma and down the transverse tubules
(B) Ca^{2+} released from SR binds to tropomyosin
(C) Troponin blocks binding of myosin heads to actin filaments
(D) Relaxation occurs when Ca^{2+} is excreted from the muscle fibre

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22. Which is the most common neurotransmitter in the brain ?

(A) Serotonin (B) Glutamate

(C) Dopamine (D) GABA

23. LH surge occurs during :

(A) Menstrual phase (B) Follicular phase

(C) Ovulatory phase (D) Luteal phase

24. The protein core of proteoglycan is rich in which residues ?

(A) Serine and Threonine (B) Serine and Methionine

(C) Threonine and Methionine (D) Alanine and Serine

25. A structure that has hydrogen bonds between polypeptide chains arranged side by side is :

(A) Primary structure (B) α-helix

(C) β-pleated sheets (D) Tertiary structure

26. A DNA renaturation (reassociation) response is given by the :

(A) sec 60 (B) cot 1/2

(C) tan 30 (D) cot 40

27. Allosteric inhibition is a kind of :

(A) Competitive inhibition (B) Uncompetitive inhibition

(C) Non-competitive inhibition (D) Suicidal inhibition

28. In craniostylic jaw suspension the lower jaw is suspended at :

(A) Quadrate (B) Squamosal

(C) Quadratojugal (D) Jugal

29. The ruminant stomach has four parts but camel lacks one part i.e. :

(A) Omasum (B) Abomasum

(C) Rumen (D) Reticulum

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30. The right common carotid artery is a branch of :

(A) The ascending artery
(B) The aortic arch
(C) The brachiocephalic artery
(D) The right subclavian artery

31. Which of the following group has completely motor cranial nerves ?

(A) I, II, III, IX, X
(B) III, IV, VI, XI, XII
(C) V, VII, IX, X
(D) II, III, IX, X, XII

32. The precursors of T-lymphocytes originate in :

(A) Bone marrow
(B) Thymus
(C) Lymph nodes
(D) Spleen

33. The capacities and volume of human lungs are given below :

(a) IC	(i) RV + ERV
(b) TLC	(ii) IC + FRC
(c) VC	(iii) TV + IRV
(d) FRC	(iv) IC + ERV

The correct matching is :

(A) (a) – (ii), (b) – (i), (c) – (iv), (d) – (iii)
(B) (a) – (iv), (b) – (ii), (c) – (i), (d) – (iii)
(C) (a) – (iii), (b) – (ii), (c) – (iv), (d) – (i)
(D) (a) – (i), (b) – (iii), (c) – (iv), (d) – (ii)

34. Which of the following indicates ventricular muscle depolarization ?

(A) P wave
(B) QRS complex
(C) T wave
(D) PR interval

35. The Vitamin that does not have a coenzyme activity :

(A) Riboflavin
(B) Tochopherol
(C) Thiamine
(D) Ascorbic acid

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36. Following is an example of glucogenic amino acid :

(A) Leucine (B) Tyrosine

(C) Alanine (D) Serine

37. FAD is reduced in which of the reactions of the Krebs cycle ?

(A) Isocitrate to Oxaloacetate (B) Succinyl CoA to Succinate

(C) Fumarate to Malate (D) Succinate to Fumarate

38. The entry of pyruvate into TCA Cycle is inhibited by a high cellular concentration of :

(A) CoA (B) AMP

(C) ATP (D) Pyruvate

39. A minimum of how many t-RNAs are required to translate, unambiguously, all 61 sense codons of the standard genetic code ?

(A) 24 (B) 31

(C) 61 (D) 42

40. During splicing which of the following site is not recognized by the spliciosome ?

(A) G-rich site (B) 5′-splice site

(C) 3′-splice site (D) Branch point site

41. The studies that led to discovery of post transcriptional gene silencing phenomenon were performed on :

(A) Sun flower (B) Petunia

(C) Maize (D) Parsley

42. The lethal mutation that is seen in yellow mice is due to which mutation ?

(A) Insertion (B) Deletion

(C) Non-sense (D) Frame-shift

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43. If a gamete has 16 chromosomes, what will be the number of chromatids before anaphase-1 ?

(A) 8 (B) 16

(C) 32 (D) 64

44. Direct repeats in the IS (insertion) element are present :

(A) Within the transposons (B) Upstream the inverted repeat

(C) Within the inverted repeat (D) Downstream the inverted repeat

45. In chick development, the cell movement during gastrulation is called :

(A) Invagination (B) Involution

(C) Ingression (D) Delamination

46. For an unborn child which of these procedures has the least risk ?

(A) Alpha-fetoprotein sampling (B) Amniocentesis

(C) Chorionic villi sampling (D) All have the same risk level

47. The type of placenta found in the ruminant ungulates is :

(A) Epithelio-chorial (B) Syndesmochorial

(C) Endotheliochorial (D) Haemochorial

48. Miocene is an epoch between :

(A) Oligocene and Pliocene (B) Pleistocene and Pliocene

(C) Palaeocene and Eocene (D) Eocene and Oligocene

49. **Pithecanthropus erectus**, the first fossil of Australopithecus was discovered by Dubois (1891) from :

(A) South Africa (B) Java

(C) Brisbane (D) Kenya

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50. The gradual evolution of a species that continues to exist as an interbreeding population is known as :

(A) Anagenesis
(B) Cladogenesis
(C) Epigenesis
(D) Micromorphometrics

51. The "Great Dying" occurred during :

(A) Jurassic mass extinction
(B) Ordovician – Silurian mass extinction
(C) Permian – Triassic mass extinction
(D) Late Devonian mass extinction

52. Domesticated rabbits were released into isolation in an island for generation of the total population, 9% were black due to recessive allele. What could be the heterozygous percentage of this gene ?

(A) 49
(B) 50
(C) 42
(D) 58

53. An example of associative learning would be :

(A) Classical conditioning
(B) Operant conditioning
(C) Pavlovian conditioning
(D) All of these

54. 'Skinner box' is used for experiments in :

(A) Classical conditioning
(B) Operant conditioning
(C) Migration of birds
(D) Taxis

55. Body's primary circadian pacemaker is the :

(A) Pineal gland
(B) Hippocampus of brain
(C) Amygdala
(D) Suprachiasmatic nucleus

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56. COS site of the cosmids :

(A) Consists of 12 bases

(B) Helps whole genome in circularization and ligation

(C) Both (A) and (B)

(D) Contains cleavage site

57. In 1990 the first gene therapy was given to treat :

(A) Small pox

(B) Vitamin-E deficiency

(C) Protein deficiency

(D) Adenosine deaminase deficiency

58. Which hormone is administered to a person suffering from a marked fall in blood pressure ?

(A) Aldosterone

(B) Adrenalin

(C) Vasopressin

(D) Calcitonin

59. Who submitted the first patent for CRISPR-Cas-9 technology in 2012 ?

(A) Jinek and Chylinski

(B) Doudna and Charpentie

(C) Fonfara and Hauer

(D) Jiankui and Johannes Mulder

60. Tetany is caused by :

(A) Hyperparathyroidism

(B) Hypoparathyroidism

(C) Hyperthyroidism

(D) Deficiency of mineralocorticoids in blood

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61. What method can be used for carrying out in-vivo fertilization for a sterile but fertile female ?

(A) ZIFT (B) GIFT

(C) IUT (D) AI

62. Which radioactive isotope is commonly used in RIA ?

(A) Uranium – 238 (B) Carbon – 14

(C) Iron – 55 (D) Hydrogen – 3

63. MHC-Class-1 molecules are primarily involved in :

(A) Recognition of glycolipid antigens (B) Resistance of fungi

(C) Resistance of viruses (D) Activation of neutrophils

64. An example of a live attenuated bacterial vaccine is :

(A) Cholera (B) Typhoid

(C) Anthrax (D) Plague

65. Covaxin, India's indigenous COVID-19 vaccine was developed by :

(A) Bharat Biotech (B) Serum Institute of India

(C) Astrazeneca (D) Pfizer

66. The by-product of a bioluminiscence reaction is :

(A) Oxygen (B) AMP

(C) ADP (D) Potassium Cyanate

67. An example of passively operated fishing gear is :

(A) Trawl net (B) Purse seine

(C) Gill net (D) Beach seine

68. The saucer shaped craft used in reservoirs for fishing in South India is :

(A) Catamaran (B) Coracle

(C) Machwa (D) Raft

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69. The Forest (Conservation) Act in India came into force from the year :

(A) 1972
(B) 1978
(C) 1980
(D) 1982

70. A Global Agreement to protect the stratospheric ozone layer was passed in :

(A) Kyoto Protocol
(B) Rio Conference
(C) Montreal Protocol
(D) Stockholm Convention

71. The species which are confined to a particular region and not found anywhere else are called :

(A) Pandemic
(B) Endemic
(C) Vulnerable
(D) Threatened

72. The scientific name of the moth which produce tasar is :

(A) Bombyx mori
(B) Philosomia ricini
(C) Antheraea assamensis
(D) Antheraea mylitta

73. Local swelling of muscles and necrosis of kidney of fish is a symptom of :

(A) Furunculosis
(B) Vibriosis
(C) Dropsy
(D) Aeromonasinfection

74. Which of the following is regarded as the best egg-producing chicken ?

(A) Leghorn
(B) Rhode Island Red
(C) Plymouth Rock
(D) Austrawhite

75. Which of the following fever is not transmitted by louse ?

(A) Epidemic typhus
(B) Trench fever
(C) Myiasis
(D) Relapsing fever

76. The first recombinant DNA molecule was synthesised by Paul Berg et. al. in the year :

(A) 1962
(B) 1972
(C) 1982
(D) 1992

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77. Which of the following is true about restriction endonucleases ?

(A) Type – I and Type – II requires ATP to move along DNA

(B) Type – I, Type – II, and Type – III requires ATP to move along DNA

(C) Type – II requires no ATP and cleaves DNA within recognition sequence

(D) Type – II requires ATP and cleaves DNA within recognition sequence

78. Which of the following sponge is harmful to the pearl oyster ?

(A) Cliona

(B) Spongilla

(C) Euspongia

(D) Hyalonema

79. Which of the following statement is not correct ?

(A) London Smog is formed in winter

(B) Los Angels Smog is photochemical in nature

(C) London Smog is reducing in nature

(D) London Smog is a sulfurous smog

80. HIV is a :

(A) Lentivirus

(B) Gallivirus

(C) Papilloma virus

(D) Adenovirus

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