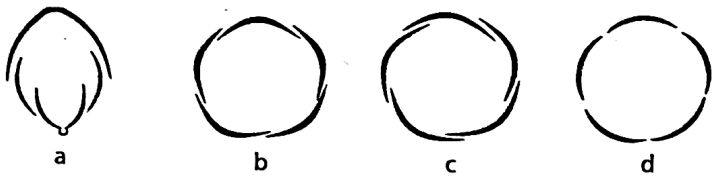
BIOLOGY - CET 2025 - VERSION CODE - A1
KEYS

1. Identify the incorrect statement with respect to the rules of Binomial Nomenclature
   (1) The first word represents the genus while second component denotes the specific epithet
   (2) Biological names are generally in Latin or Latinised irrespective of their origin
   (3) Biological names are underlined separately when handwritten
   (4) Biological names are printed in italics to indicate their non-Latin origin
   Ans (4)
2. Match Column-I with Column-II and choose the correct option given below:

Column-I (Bacteria)		**Column-II (Shape)**	
(a)	Coccus	(i)	Rod-shaped
(b)	Bacillus	(ii)	Spiral
(c)	Vibrium	(iii)	Spherical
(d)	Spirillum	(iv)	Comma-shaped

   (1) (a) – (iv), (b) – (i), (c) – (ii), (d) – (iii) (2) (a) – (iii), (b) – (i), (c) – (iv), (d) – (ii)
   (3) (a) – (iii), (b) – (ii), (c) – (iv), (d) – (i) (4) (a) – (iv), (b) – (iii), (c) – (ii), (d) – (i)
   Ans (2)
3. Read the given statements and choose the correct option:
   Statement I: Gemmae are green, unicellular, sexual buds which develop in receptacles called gemma cups
   Statement II: Protonema develops directly from a spore
   (1) Both statement I and Statement II are true
   (2) Statement I is true but Statement II is false
   (3) Statement I is false but Statement II is true
   (4) Both Statement I and Statement II are false
   Ans (3)
4. During a field trip, a student observed a marine organism with worm-like body. The cylindrical body was divisible into proboscis, collar and a long trunk. The organism may be _____
   (1) *Balanoglossus* (2) *Ophiura* (3) *Pterophyllum* (4) *Trygon*
   Ans (1)
5. Identify the types of aestivation in corolla labelled as ‘a ‘b ‘c’ and ‘d’



   (1) a - Vexillary, b - Twisted, c - Imbricate, d - Valvate
   (2) a - imbricate, b - Valvate, c - Vexillary, d - Twisted
   (3) a - Vexillary, b - Imbricate, c - Twisted, d - Valvate
   (4) a - Vexillary, b - Imbricate, c - Valvate, d – Twisted
   Ans (3)

6. Match the Column-I with Column-II and choose the correct option:

Column-I (Characteristics of vascular bundle)		Column-II (Transverse section)	
(a)	Radial, tetrarch, cambial ring between xylem and phloem at later stages	(i)	T.S. of monocot stem
(b)	Conjoint, open and endarch	(ii)	T.S. of dicot root
(c)	Radial, polyarch, large pith without cambial ring	(iii)	T.S. of monocot root
(d)	Conjoint, closed with sclerenchymatous bundle sheath	(iv)	T.S. of dicot stem

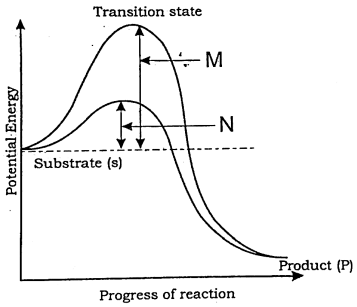
(1) (a) – (i), (b) – (ii), (c) – (iii), (d) – (iv) (2) (a) – (ii), (b) – (iii), (c) – (iv), (d) – (i)
(3) (a) – (ii), (b) – (iv), (c) – (iii), (d) – (i) (4) (a) – (iii), (b) – (iv), (c) – (i), (d) – (ii)
Ans (3)

7. Which of the following statements are correct with respect to Frogs?
(a) Bidder's canals are present in male Frogs
(b) Copulatory pads are present in female Frogs
(c) Sound producing vocal sacs are present in male Frogs
(d) Cloaca is present in male Frog only.
Choose the most appropriate answer from the options given below:
(1) a and d (2) a and b (3) a and c (4) b and d
Ans (3)

8. The reserve material in prokaryotic cells are stored in the cytoplasm in the form of _____
(1) Exclusion bodies (2) Inclusion bodies
(3) Exclusion and inclusion bodies (4) Fat bodies
Ans (2)

9. The cell wall less prokaryote among the following is
(1) Bacteria (2) Blue-Green Algae (3) Cyanobacteria (4) Mycoplasma
Ans (4)

10. The graph showing the concept of activation energy of enzyme is given below:



Observe the graph and choose the correct option for M and N.
(1) M-Activation energy without enzyme, N-Activation energy with enzyme
(2) M-Activation energy with enzyme, N-Activation energy without enzyme
(3) M-High temperature, High activation energy, N-Low temperature, Low activation energy
(4) M-High substrate, High activation energy, N-Low substrate, Low activation energy
Ans (1)

11. Match the stages of prophase I given in Column-I with their features in Column-II and choose the correct options from the choices given below:

Column-I		Column-II	
(a)	Leptotene	(i)	Exchange of genetic materials between non-sister chromatids of the homologous chromosomes
(b)	Zygotene	(ii)	Chromosomes visible under light microscope
(c)	Pachytene	(iii)	Dissolution of synaptonemal complex
(d)	Diplotene	(iv)	Chromosomes start pairing together
(e)	Diakinesis	(v)	Terminalisation of *chiasmata*

(1) (a) – (i), (b) – (ii), (c) – (iii), (d) – (iv), (e) – (v) (2) (a) – (v), (b) – (iv), (c) – (i), (d) – (iii), (e) – (ii)
(3) (a) – (iv), (b) – (i), (c) – (ii), (d) – (iii), (e) – (v) (4) (a) – (ii), (b) – (iv), (c) – (i), (d) – (iii), (e) – (v)
Ans (4)

12. Read the given statements and choose the correct option:
Statement I: In Calvin cycle, Carboxylation is catalysed by PEP Carboxylase
Statement II: In Hatch-Slack pathway, Carboxylation is catalysed by RuBP Carboxylase.
(1) Both Statement I and Statement II are true
(2) Statement I is true but Statement II is false
(3) Statement I is false but Statement II is true
(4) Both Statement I and Statement II are false
Ans (4)

13. The TCA cycle starts with the condensation of acetyl group with _____
(1) Oxaloacetic acid (2) Citric acid
(3) α-Ketoglutaric acid (4) Succinic acid
Ans (1)

14. Match the plant growth hormones of Column-I with suitable chemical derivatives present in Column-II and choose the correct option given below:

Column-I		Column-II	
(a)	Abscisic acid	(i)	Adenine derivative
(b)	Gibberellins	(ii)	Indole acetic acid
(c)	Kinetin	(iii)	Carotenoid derivative
(d)	Auxin	(iv)	Terpenes

(1) (a) – (i), (b) – (ii), (c) – (iii), (d) – (iv) (2) (a) – (iii), (b) – (i), (c) – (iv), (d) – (ii)
(3) (a) – (iii), (b) – (iv), (c) – (i), (d) – (ii) (4) (a) – (iii), (b) – (i), (c) – (ii), (d) – (iv)
Ans (3)

15. The respiratory mechanism controlled by medulla oblongata can be altered by
(1) Pneumotaxic center in the pons
(2) Chemosensitive area in the medulla
(3) Both Pneumotaxic and Chemosensitive areas of pons and medulla oblongata
(4) Corpus callosum of brain
Ans (3)

16. Which among the three layers of blood vessel wall - Tunica Intima, Tunica media and Tunica Externa is comparatively thin in the veins?
(1) Tunica media (2) Tunica Intima
(3) Tunica externa (4) Both tunica media and tunica externa
Ans (1)

17. In nephron, transport of substances like sodium chloride and urea is facilitated by the special arrangement called counter current mechanism that comprises of
(1) Henle's loop and *Vasa Recta* (2) Henle's loop and glomerulus
(3) Vasa Recta and collecting duct (4) Ascending limb and collecting duct
Ans (1)

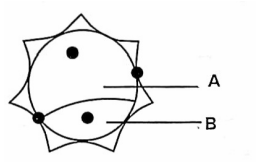
18. In the mechanism of muscle contraction or shortening of muscle, the _____ get reduced whereas the _____ retain the length.
(1) A bands, I bands (2) I bands, A bands (3) Z line, I bands (4) A bands, Z line
Ans (2)

19. Identify the correct sequence of action potential as it arrives at the axon terminal from the choices given below:
(1) Axon terminal → Synaptic vesicles → Synaptic cleft → Post-synaptic membrane → Post-synaptic neuron
(2) Axon terminal → Synaptic cleft → Synaptic vesicles → Post-synaptic neuron → Post-synaptic membrane
(3) Axon terminal → Post-synaptic membrane → Synaptic cleft → Synaptic vesicles → Post-synaptic neuron
(4) Axon terminal → Synaptic vesicles → Post-synaptic membrane → Synaptic cleft → Post-synaptic neuron
Ans (1)

20. Identify the statement/s given below that does not correspond to the functions of cortisol
(i) Maintains cardiovascular system and kidney functions
(ii) Produces anti-inflammatory reactions
(iii) Maintains electrolyte balance, osmosis and blood pressure
(iv) Suppresses immune response
(v) Stimulates RBC production
(1) i and ii only (2) iii and v only (3) iii only (4) iv only
Ans (3)

21. When pollen grains of a flower of a plant pollinate the stigma of flower of another plant, it is called _____
(1) Xenogamy (2) Autogamy (3) Dichogamy (4) Geitonogamy
Ans (1)

22. Fusion of a male gamete with the central cell in the embryo sac of an angiosperm is called
(1) Double fertilization (2) Triple fusion (3) Syngamy (4) Apomixis
Ans (2)

23. 

Which of these options is true in the context of the above diagram of pollen grain?

(1) 'A' is a generative cell which forms male gametes and 'B' is a vegetative cell which produces pollen tube

(2) 'A' is a vegetative cell which gives rise to male gametes and 'B' is a generative cell which produces pollen tube

(3) 'A' is a generative cell which gives rise to pollen tube and 'B' is a vegetative cell which forms male gametes

(4) 'A' is a vegetative cell with abundant food reserve and 'B' is a generative cell which forms male gametes

Ans (4)

24. Match the hormone with its site of production:

Hormone		Site of production	
(a)	hCG and hPL	(i)	Ovary
(b)	Progesterone	(ii)	Placenta
(c)	Androgens	(iii)	Corpus luteum
(d)	Relaxin	(iv)	Leydig cells

(1) (a) – (ii), (b) – (iii), (c) – (iv), (d) – (i) (2) (a) – (iii), (b) – (i), (c) – (iv), (d) – (ii)

(3) (a) – (iv), (b) – (i), (c) – (ii), (d) – (iii) (4) (a) – (i), (b) – (ii), (c) – (iv), (d) – (iii)

Ans (1)

25. Choose the correct sequence of sperm transport during ejaculation

(1) Seminiferous tubules → rete testis → vasa efferentia → epididymis → vas deferens → ejaculatory duct

(2) Seminiferous tubules → rete testis → epididymis → vasa efferentia → vas deferens → ejaculatory duct

(3) Seminiferous tubules → vasa efferentia → rete testis → epididymis → vas deferens → ejaculatory duct

(4) Seminiferous tubules → rete testis → epididymis → vas deferens → vasa efferentia → ejaculatory duct

Ans (1)

26. Select the mismatched pair.

(a) First month of pregnancy - Formation of heart

(b) Second month of pregnancy - Movement of foetus

(c) Third month of pregnancy - Formation of most of the major organ systems

(d) Sixth month of pregnancy - Eye lids separate and eye lashes are formed

(1) a (2) b (3) c (4) d

Ans (2)

27. Out of the following options, identify which one is NOT a natural method of contraception?
(1) Coitus interruptus (2) Implants
(3) Lactational amenorrhea (4) Periodic abstinence
Ans (2)

28. In zygote intrafallopian tube transfer, the embryo upto _____ stage is transferred into the fallopian tube
(1) 2 blastomeres (2)16 blastomeres (3) 8 blastomeres (4) 32 blastomeres
Ans (3)

29. Read the following statements:
Statement I: MTP is to get rid off wanted pregnancies due to causal unprotected intercourse or failure of contraceptives used during coitus or rapes
Statement II: MTPs are performed legally by qualified doctors by giving proper medical justification
Choose the correct answer from the options given below:
(1) Statements I and II are correct
(2) Statements I and II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
Ans (4)

30. How many types of gametes will be formed by a parent with genotype 'AaBbCc'?
(1) 6 (2) 4 (3) 8 (4) 12
Ans (3)

31. When a single gene exhibits multiple phenotypic expression, the phenomenon is called _____
(1) Polygenic inheritance (2) Incomplete dominance
(3) Pleiotropy (4) Co-dominance
Ans (3)

32. A colourblind man marries a carrier woman. The percentage of their colourblind progeny in the next generation will be _____
(1) 25% (2) 50% (3) 75% (4) 100%
Ans (2)

33. Identify which one of the given pair of options is correct with respect to Down's syndrome and Turner's syndrome.

Option	Down's syndrome symptoms	Turner's syndrome symptoms
(a)	Short-statured individual	Gynaecomastia in man
(b)	Round head, partially open mouth	Overall masculine development
(c)	Broad palm, physical and mental development retarded	Sterile females with rudimentary ovaries
(d)	Additional copy of an X-chromosome	Absence of an X-chromosome

(1) a (2) b (3) c (4) d
Ans (3)

34. RNA polymerase II is responsible for the transcription of _____
(1) tRNA (2) rRNA (3) hnRNA (4) snRNA

Ans (3)

35. Which of the following enzymes increases the permeability of the bacterial cell to lactose?
(1) β-galactosidase (2) Permease
(3) Transacetylase (4) Amylase
Ans (2)

36. Which of the following statements are correct with reference to prokaryotic genome?
(a) Monocistronic structural genes
(b) Introns absent in structural genes
(c) Transcription and translation are coupled processes
(d) Primary transcript undergoes splicing
(e) Only one RNA polymerase is present
(1) Only a, b and d are correct (2) Only b, c and e are correct
(3) Only a, d and e are correct (4) Only a, b and c are correct
Ans (2)

37. When a change in the gene frequency of a population occurs by chance, it is called _____
(1) Founder effect (2) Gene migration
(3) Genetic recombination (4) Genetic drift
Ans (4)

38. Darwin's finches represent one of the best examples of _____.
(1) Seasonal migration (2) Adaptive radiation
(3) Chemical evolution (4) Genetic equilibrium
Ans (2)

39. Choose the correct statements from the following:
(a) Charles Darwin travelled around the world in a ship called HMS Beagle
(b) There has been gradual evolution of life forms
(c) According to Darwin, fitness refers to physical fitness only
(d) Fossils are remains of hard parts of life forms found in rocks
(e) Hugo De Vries, a naturalist worked in Malay Archipelago.
(1) a, b and e are correct (2) a, c and e are correct
(3) a, b and d are correct (4) a, c and d are correct
Ans (3)

40. In which of the following, HIV replicates and produces its progeny viruses?
(1) Helper T–lymphocytes (2) Memory T-lymphocytes
(3) Killer T-lymphocytes (4) Suppressor T-lymphocytes
Ans (1)

41. Which of the following are the techniques for detection of cancer of internal organs?
(a) Radiography, MRI (b) MRI, computed tomography
(c) Widal test, radiography (d) MRI, widal test
(1) a and b (2) a and c (3) b and c (4) b and d
Ans (1)

42. Malignant malaria is caused by

(1) *Plasmodium malariae* (2) *Palsmodium vivax*

(3) *Plasmodium falciparum* (4) *Plasmodium rubrum*

Ans (3)

43. The drug prescribed to the patients who have undergone organ transplant is _____and is produced by _____

(1) Cyclosporin-A, *Monascus purpureus* (2) Statin, *Monascus purpureus*

(3) Cyclosporin-A, *Trichoderma polysporum* (4) Statin, *Trichoderma polysporum*

Ans (3)

44. Read the following statements and select the correct option

Statement I: Biocontrol refers to the use of biological methods for controlling plant diseases and pests.

Statement II: *Trichoderma* species are effective biocontrol agents for several plant pathogens

(1) Statement I is correct and statement II is incorrect.

(2) Both Statement I and statement II are incorrect.

(3) Statement I is incorrect but statement II is correct.

(4) Both Statement I and statement II are correct.

Ans (4)

45. Match the Column-I with Column-II. Choose the correct option given below

Column I		**Column II**	
(a)	*Streptococcus*	(i)	Free living nitrogen fixing bacteria
(b)	*Penicillium*	(ii)	Clot bluster
(c)	Methanogens	(iii)	Source of antibiotic
(d)	*Anabaena*	(iv)	Biogas production

(1) (a) – (ii), (b) – (iii), (c) – (iv), (d) – (i) (2) (a) – (ii), (b) – (iv), (c) – (iii), (d) – (i)

(3) (a) – (iv), (b) – (iii), (c) – (i), (d) – (ii) (4) (a) – (iv), (b) – (i), (c) – (iii), (d) – (ii)

Ans (1)

46. Match the contents of List-I with List-II

List - I		**List - II**	
(a)	Bioreactors	(i)	Insulin produced by rDNA technology
(b)	Downstream processing	(ii)	Vessels which convert raw material into specific product
(c)	Recombinant protein	(iii)	Detect mutated genes in suspected cancer patient
(d)	PCR	(iv)	Involves separation and purification.

(1) (a) - (ii), (b) - (iv), (c) - (i), (d) - (iii)

(2) (a) - (iv), (b) - (ii), (c) - (iii), (d) - (i)

(3) (a) - (i), (b) - (ii), (c) - (iv), (d) - (iii)

(4) (a) - (ii), (b) - (i), (c) - (iii), (d) - (iv)

Choose the correct option from the following

Ans (1)

47. The part of plasmid that codes for proteins involved in the replication of the pBR322 Plasmid is
(1) Ori site (2) Selectable marker (3) "rop" (4) cloning site
Ans (3)

48. To isolate DNA from fungal cells, bacterial cells and plant cells, the enzymes required are respectively are
(1) Lysozyme, Cellulase and Chitinase
(2) Lysozyme, Proteases and Ribonuclease
(3) Chitinase, Lysozyme and Cellulase
(4) Cellulase, Protease and Lysozyme
Ans (3)

49. In mature insulin, which of the peptide is not present?
(1) A-peptide (2) B-peptide (3) C-peptide (4) A and B peptides
Ans (3)

50. A scientist wants to produce virus-free plant in tissue culture. Which part of the plant will he use as an explant?
(a) mature stem (b) axillary meristem
(c) apical meristem (d) mesophyll cell
Choose the correct option from the following.
(1) a only (2) b and c (3) b only (4) c and d
Ans (2)

51. Some strains of *Bacillus thuringiensis* produce proteins that kill insects. Which one of the following is not killed by proteins of Bacillus thuringiensis?
(1) Tobacco budworm (2) Armyworm
(3) Cotton bollworm (4) Tapeworm
Ans (4)

52. Which one of the following population attributes, contributes to increase in population density?
(1) Natality and Immigration (2) Mortality and Emmigration
(3) Natality and Emmigration (4) Mortality and Immigration
Ans (1)

53. If 8 individuals in a laboratory population of 80 fruit flies died during a specified time interval, the death rate in the population during that period is
(1) 0.01 individual/time interval (2) 0.001 individual/time interval
(3) 0.1 individual/time interval (4) 1 individual/time interval
Ans (3)

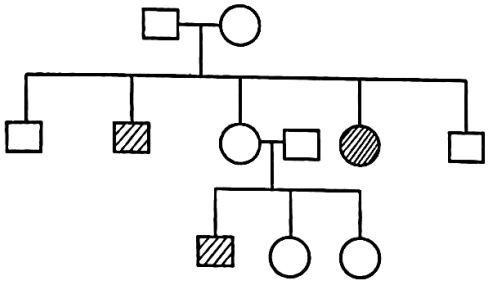
54. Choose the correct sequence of steps involved in decomposition
(1) Fragmentation → Catabolism → Leaching → Humification → Mineralisation
(2) Fragmentation → Leaching → Catabolism → Mineralisation → Humification
(3) Fragmentation → Mineralisation → Humification → Leaching → Catabolism
(4) Fragmentation → Leaching → Catabolism → Humification → Mineralisation.
Ans (4)

55. With respect to limitation of Ecological pyramids, which of the following statements are correct?
(a) It does not take into account the same species belonging to two or more trophic levels.
(b) It assumes a simple food chain, something that almost never existed in nature.
(c) It accommodates saprophytes.
(d) It does not accommodate a food web
Choose the correct answer from the options given below.
(1) a and b (2) b and c (3) c and d (4) a, b and d
Ans (4)

56. The 'Sixth Extinction' of species, presently in progress, is _____ times faster than the previous five episodes of mass extinctions.
(1) 10 to 100 (2) 100 to 1000 (3) 1000 to 10000 (4) 1 to 10
Ans (2)

57. Species diversity _____, as we move away from the _____ towards _____
(1) Increases, Equator, Poles (2) Decreases, Equator, Poles
(3) Decreases, Poles, Equator (4) Stable, Equator, Poles
Ans (2)

58. In a practical examination, the following pedigree chart was given as a spotter for identification. The students identify the given pedigree chart as _____



(1) Autosomal dominant (2) Autosomal recessive
(3) Sex-linked dominant (4) Sex-linked recessive
Ans (2)

59. A student observed the T.S. of a plant organ slide under microscope. He observed the vascular bundles in the stelar region as conjoint collateral and open. Based on these features of vascular bundle, identify the correct option from below.
(1) Dicot Root (2) Dicot Stem (3) Monocot Root (4) Monocot Stem
Ans (2)

60. A student observed the slide of mitosis under the microscope and observed that the chromosomes were placed at the opposite poles. Which stage was the student observing?
(1) Prophase (2) Anaphase (3) Metaphase (4) Telophase
Ans (4)

* * *