



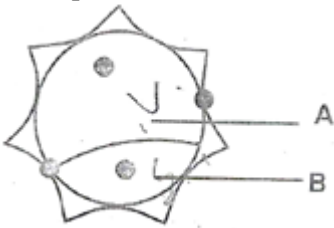
KCET Test–2025

PYQ

Biology

1. When pollen grains of a flower of a plant pollinate the stigma of flower of another plant, it is called  
 (A) Autogamy (B) Dichogamy  
 (C) Geitonogamy (D) Xenogamy

2. Fusion of a male gamete with the central cell in the embryo sac of an angiosperm is called .....  
 (A) Triple fusion (B) Syngamy  
 (C) Apomixis (D) Double fertilization



3. Which of these options is true in the context of the above diagram of pollen grain ?  
 (A) 'A' is a vegetative cell which gives rise to male gametes and 'B' is a generative cell which produces pollen tube  
 (B) 'A' is a generative cell which gives rise to pollen tube and 'B' is a vegetative cell which form male gametes  
 (C) 'A' is a vegetative cell with abundant food reserve and 'B' is a generative cell which form male gametes  
 (D) 'A' is a generative cell which forms male gametes and 'B' is a vegetative cell which produces pollen tube

4. 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

- (A) a-iii, b-I, c-iv, d-ii  
 (B) a-iv, b-i, c-ii, d-iii  
 (C) a-i, b-ii, c-iv, d-iii  
 (D) a-ii, b-iii, c-iv, d-i
5. Choose the correct sequence of sperm transport during ejaculation  
 (A) Seminiferous tubules → rete testis → epididymis → vasa efferentia → vas deferens → ejaculatory duct

- (B) Seminiferous tubules → vasa efferentia → rete testis → epididymis → vas deferens → ejaculatory duct  
 (C) Seminiferous tubules → rete testis → epididymis → vas deferens → vasa efferentia → ejaculatory duct  
 (D) Seminiferous tubules → rete testis → vasa efferentia → epididymis → vas deferens → ejaculatory duct

6. Select the mismatched pair :  
 (1) First month of pregnancy – Formation of heart  
 (2) Second month of pregnancy – Movement of foetus  
 (3) Third month of pregnancy – Formation of most of the major organ systems  
 (4) Six month of pregnancy – Eye lids separate and eye lashes are found  
 (A) b (B) c  
 (C) d (D) a

7. Out of the following options, identify which one is NOT a natural method of contraception ?  
 (A) Implants  
 (B) Lactational amenorrhea  
 (C) Periodic abstinence  
 (D) Coitus interruptus

8. In zygote intrafallopian tube transfer, the embryo upto ..... stage is transferred into the fallopian tube  
 (A) 16 blastomeres (B) 8 blastomeres  
 (C) 32 blastomeres (D) 2 blastomeres

9. Read the following statements :  
**Statement I** : MTP is to get rid off wanted pregnancies due to a 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 :  
 (A) Statements I and II are incorrect  
 (B) Statement I is correct but Statement II is incorrect  
 (C) Statement I is incorrect but Statement II is correct  
 (D) Statements I and II are correct



10. How many types of gametes will be formed by a parent with genotype 'AaBbCc' ?  
 (A) 4 (B) 8  
 (C) 12 (D) 6
11. When a single gene exhibits multiple phenotypic expression, the phenomenon is called \_\_\_\_  
 (A) Incomplete dominance  
 (B) Pleiotropy  
 (C) Co-dominance  
 (D) Polygenic inheritance
12. A colourblind man marries a carrier woman. The percentage of their colourblind progeny in the next generation will be \_\_\_\_  
 (A) 50% (B) 75%  
 (C) 100% (D) 25%
13. 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               |
- (A) b (B) c  
 (C) d (D) a
14. RNA polymerase II is responsible for the transcription of \_\_\_\_  
 (A) rRNA (B) hnRNA  
 (C) snRNA (D) tRNA
15. Which of the following enzymes increases the permeability of the bacterial cell to lactose?  
 (A) Permease (B) Transacetylase  
 (C) Amylase (D)  $\beta$ -galactosidase
16. 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
- (A) Only b, c and e are correct  
 (B) Only a, d and e are correct  
 (C) Only a, b and c are correct  
 (D) Only a, b and d are correct
17. When a change in the gene frequency of a population occurs by chance, it is called \_\_\_\_  
 (A) Gene migration  
 (B) Genetic recombination  
 (C) Genetic drift  
 (D) Founder effect
18. Darwin's finches represent one of the best examples of \_\_\_\_  
 (A) Adaptive radiation  
 (B) Chemical evolution  
 (C) Genetic equilibrium  
 (D) Seasonal migration
19. 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.  
 (A) a, c and e are correct  
 (B) a, b and d are correct  
 (C) a, c and d are correct  
 (D) a, b and e are correct
20. In which of the following, HIV replicates and produces its progeny viruses?  
 (A) Memory T-lymphocytes  
 (B) Killer T-lymphocytes  
 (C) Suppressor T-lymphocytes  
 (D) Helper T-lymphocytes
21. 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  
 (A) a and c (B) b and c  
 (C) b and d (D) a and b



22. Malignant malaria is caused by

- (A) Plasmodium vivax  
(B) Plasmodium falciparum  
(C) Plasmodium rubrum  
(D) Plasmodium malariae

23. The drug prescribed to the patients who have undergone organ transplant is \_\_\_\_\_ and is produced by \_\_\_\_\_.

- (A) Stain, Monascus purpureus  
(B) Cyclosporin-A, Trichoderma polysporum  
(C) Statin, Trichoderma polysporum  
(D) Cyclosporin-A, Monascus purpureus

24. 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

- (A) Both statement I and statement II are incorrect  
(B) Statement I is incorrect but statement II is correct  
(C) Both statement I and statement II are correct  
(D) Statement I is correct and statement II is incorrect

23. 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 buster
(c)	Methanogens	iii.	Source of antibiotic
(d)	Anabaena	iv.	Biogas production

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

26. 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 potien
(d)	PCR	iv.	Involves separation and purification.

Choose the correct option from the following

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

27. The part of plasmid that codes for proteins involved in the replication of the PBR322 plasmid is

- (A) Selectable marker  
(B) "rop"  
(C) Cloning site  
(D) Ori site

28. To isolate DNA from fungal cells, bacterial cells and plant cells, the enzymes required are respectively

- (A) Lysozyme, Proteases and Ribonuclease  
(B) Chitinase, Lysozyme and Cellulase  
(C) Cellulase, Protease and Lysozyme  
(D) Lysozyme, Cellulase and Chitinase

29. In mature insulin, which of the peptide is not present?

- (A) B-peptide (B) C-peptide  
(C) A and B peptides (D) A-peptide

30. 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 cells

Choose the correct option from the following.

- (A) b and c (B) b only  
(C) c and d (D) a only



31. Some strains of *Bacillus thuringiensis* produce proteins that kill insects. Which one of the following is not killed by proteins of *Bacillus thuringiensis*?
- (A) Armyworm (B) Cotton bollworm  
(C) Tapeworm (D) Tobacco budworm
32. Which one of the following population attributes, contributes to increase in population density?
- (A) Mortality and Emigration  
(B) Natality and Emigration  
(C) Mortality and Immigration  
(D) Natality and Immigration
33. 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
- (A) 0.001 individual/time interval  
(B) 0.1 individual/time interval  
(C) 1 individual/time interval  
(D) 0.01 individual/time interval
34. Choose the correct sequence of steps involved in decomposition
- (A) Fragmentation → Leaching → Catabolism → Mineralisation → Humification  
(B) Fragmentation → Mineralisation → Humification → Leaching → Catabolism  
(C) Fragmentation → Leaching → Catabolism → Humification → Mineralisation  
(D) Fragmentation → Catabolism → Leaching → Humification → Mineralisation
35. 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.
- (A) B and c (B) c and d  
(C) a, b and d (D) a and b
36. The 'Sixth Extinction' of species, presently in progress, is \_\_\_\_\_ times faster than the previous five episodes of mass extinctions.
- (A) 100 to 1000 (B) 1000 to 10000  
(C) 1 to 10 (D) 10 to 100
37. Species diversity \_\_\_\_\_, as we move away from the \_\_\_\_\_ towards \_\_\_\_\_
- (A) Decreases, Equator, Poles  
(B) Decreases, Poles, Equator  
(C) Stable, Equator, Poles  
(D) Increases, Equator, Poles
38. In a practical examination, the following pedigree chart was given as a spotter for identification. The students identify the given pedigree chart as \_\_\_\_\_
- 
- (A) Autosomal recessive  
(B) Sex-linked dominant  
(C) Sex-linked recessive  
(D) Autosomal dominant
39. 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.
- (A) Dicot Stem (B) Monocot Root  
(C) Monocot Stem (D) Dicot Root
40. 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?
- (A) Anaphase (B) Metaphase  
(C) Telophase (D) Prophase
41. Identify the incorrect statement with respect to the rules of Binomial Nomenclature.
- (A) Biological names are generally in Latin or Latinised irrespective of their origin  
(B) Biological names are underlined separately when handwritten  
(C) Biological names are printed in Italics to indicate their non-Latin origin  
(D) The first word represents the genus while second component denotes the specific epithet



42. 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

- (A) a-iii, b-i, c-iv, d-ii  
 (B) a-iii, b-ii, c-iv, d-i  
 (C) a-iv, b-iii, c-ii, d-i  
 (D) a-iv, b-i, c-ii, d-iii
43. 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
- (A) Statement I is true but Statement II is false  
 (B) Statement I is false but Statement II is true  
 (C) Both Statement I and Statement II are false  
 (D) Both Statement I and Statement II are false
44. 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 .....
- (A) Ophiura (B) Pterophyllum  
 (C) Trygon (D) Balanoglossus

45. Identify the types of aestivation in corolla labeled as 'a', 'b', 'c' and 'd'



- (A) a-Imbricate, b-Valvate, c-Vexillary, d-Twisted  
 (B) a-Vexillary, b-Imbricate, c-Twisted, d-Valvate  
 (C) a- Vexillary, b-Imbricate, c- Valvate, d-Twisted  
 (D) a- Vexillary, b- Twisted, c- Imbricate, d-Valvate

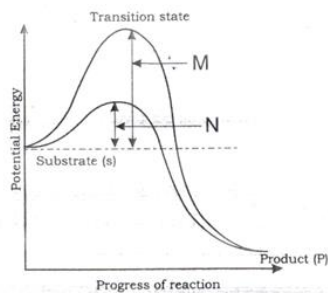
46. Match the Column-I with Column-II and choose the correct option :

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 pitch without cambial ring	iii.	T.S of dicot stem
d.	Conjoint, closed with sclerenchymatous bundle sheath	iv.	T.S of dicot stem

- (A) a-ii, b-iii, c-iv, d-i  
 (B) a-ii, b-iv, c-iii, d-i  
 (C) a-iii, b-iv, c-i, d-ii  
 (D) a-i, b-ii, c-iii, d-iv
44. 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 male Frogs  
 (c) Sound producing vocal sacs are present in male Frogs  
 (d) Cloaca is present male Frog only.
- Choose the most appropriate answer from the options given below :
- (A) a and b (B) a and c  
 (C) b and d (D) a and d
48. The reserve material in prokaryotic cells are stored in the cytoplasm in the form of .....
- (A) Inclusion bodies  
 (B) Exclusion and inclusion bodies  
 (C) Fat bodies  
 (D) Exclusion bodies
49. The cell wall less prokaryote among the following is
- (A) Blue-Green Algae  
 (B) Cyanobacteria  
 (C) Mycoplasma  
 (D) Bacteria



50. 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.

- (A) M-Activation energy with enzyme, N-Activation energy without enzyme  
 (B) M-High temperature, High activation energy, N-Low temperature, Low activation energy  
 (C) M-High substrate, High activation energy, N-Low substrate, Low activation energy  
 (D) M-Activation energy without enzyme, N-Activation energy with enzyme
51. 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 – I	
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

- (A) a – v, b – iv, c – i, d – iii, e – ii  
 (B) a – iv, b – i, c – ii, d – iii, e – v  
 (C) a – ii, b – iv, c – i, d – iii, e – v  
 (D) a – i, b – ii, c – iii, d – iv, e – v
52. 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  
 (A) Statement I is true but Statement II is false  
 (B) Statement I is false but Statement II is true  
 (C) Both Statement I and Statement I are false

(D) Both Statement I and Statement II are true

53. The TCA cycle starts with the condensation of acetyl group with  
 (A) Citric acid (B)  $\alpha$ -Ketoglutaric acid  
 (C) Succinic acid (D) Oxaloacetic acid
54. 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 – I	
a.	Absciscic acid	i.	Adenine derivative
b.	Gibberellins	ii.	Indole acetic acid
c.	Kinetin	iii.	Carotenoid derivative
d.	Auxin	iv.	Terpens

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

55. The respiratory mechanism controlled by medulla oblongata can be altered by  
 (A) Chemosensitive area in the medulla  
 (B) Both Pneumotaxic and Chemosensitive areas of pons and medulla oblongata  
 (C) Corpus callosum of brain  
 (D) Pneumotaxic center in the pons
56. Which among the three layers of blood vessel wall – Tunica intima, Tunica media and Tunica Externa is comparatively thin in the veins?  
 (A) Tunica intima  
 (B) Tunica externa  
 (C) Both tunica media and tunica externa  
 (D) Tunica media
57. In nephron, transport of substances: like sodium chloride and urea is facilitated by the special © arrangement called counter current mechanism that comprises of  
 (A) Henle's loop and glomerulus  
 (B) Vasa Recta and collecting duct  
 (C) Ascending limb and collecting duct  
 (D) Henle's loop and Vasa Recta



58. In the mechanism-of muscle-contraction or shortening of muscle, the \_\_\_\_\_ get reduced whereas the \_\_\_\_ retain the length.
- (A) I bands, A bands  
 (B) Z line, I bands  
 (C) A bands, Z line  
 (D) A bands, I bands
59. Identify the correct sequence of action potential as it arrives at the axon terminal from the choices given below :
- (A) Axon terminal → Synaptic cleft → Synaptic vesicles → Post-synaptic neuron → Post-synaptic membrane  
 (B) Axon terminal → Post-synaptic membrane → Synaptic cleft → Synaptic vesicles → Post-synaptic neuron  
 (C) Axon terminal → Synaptic vesicles → Post-synaptic membrane → Synaptic cleft → Post-synaptic neuron  
 (D) Axon terminal → Synaptic vesicles → Synaptic cleft → Post-synaptic membrane → Post-synaptic neuron
60. 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
- (A) (iii) and (v) only  
 (B) (ii) only  
 (C) (iv) only  
 (D) (i) and (ii) only