# DORIGHT DO RIGHT FOR GENUINE EDUCATION

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# **DR ACADEMY IS THE PERFECT DESTINATION FOR MEDICAL ASPIRANTS**





1.

5.

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

| the correct option given below. |                           |  |  |  |
|---------------------------------|---------------------------|--|--|--|
| Column-I                        | Column-II                 |  |  |  |
| a) Streptococcus                | i) Free living nitrogen   |  |  |  |
|                                 | fixing bacteria           |  |  |  |
| b) Penicillium                  | ii) Colt buster           |  |  |  |
| c) Methanogens                  | iii) Source of antibiotic |  |  |  |
| d) Anabaena                     | iv) Biogas production     |  |  |  |

1) a-iv, b-iii, c-i, d-ii 2) a-iv, b-i, c-iii, d-ii 3) a-ii, b-iii, c-iv, d-i 4) a-ii, b-iv, c-iii, d-i

List-II

#### Ans. 3

Match the contents of List-I with List-II 6.

List-I

|  |      | 21001                 | 2100 11                                      |
|--|------|-----------------------|--|
|  |      | a) Bioreactors        | i) Insulin produced by                       |
| prescribed to the patients who have      |      | b) Downstream         | rDNA technology<br>ii) Vessels which convert |
| ne organ transplant is and is            |      | processing            | raw material into                            |
| by                                       |      | processing            |  |
| porin-A, Trichoderma polysporum          |      |                       | specific product                             |
| Trichoderma polysporum                   |      | c) Recombinant        | iii) Detect mutated genes                    |
| porin-A, Monascus puupureus              |      | protein               | in suspected cancer                          |
| Monascus purpureus                       |      | 1) DOD                | patient                                      |
|  |      | d) PCR                | iv) Involves separation                      |
|  |      |                       | and purification                             |
| following statements and select the      |      |                       | -ii 2) a-ii, b-i, c-iii, d-iv                |
| ption.                                   |      | 3) a-ii, b-iv, c-i, d | -iii 4) a-iv, b-ii, c-iii, d-i               |
| nt-I: Biocontrol refers to the use of    | Ans. | 3                     |  |
| methods for controlling plant            |      |                       |  |
| and pests.                               | 7.   |                       | mid that codes for proteins                  |
| it-II: Trichoderma species are effective |      |                       | replication of the $pBR^{322}$               |
| agents for several plant pathogens.      |      | Plasmid is            |  |
| nent-I is incorrect but statement-II is  |      | 1) "rop"              | 2) cloning site                              |
| lent-i is mediteet but statement-ii is   |      | 3) Ori site           | 4) Selectable marker                         |
| statement-I and statement-II are         | Ans. | <b>1</b>              |  |
| statement-i and statement-ii are         |      |                       |  |
| nent-I and statement-II is incorrect     | 8.   |                       | om fungal cells, bacterial cells             |
| statement-I and statement-II are         |      | =                     | the enzymes required are                     |
| statement i and statement ii are         |      | respectively          |  |
|  |      |                       | bzyme and Cellulase                          |
|  |      | •                     | ease and Lysozyme                            |
|  |      |                       | ulase and Chitinase                          |
|  |      | 4) Lysozyme, Prot     | eases and Ribonuclease                       |
|  | Ans. | 1                     |  |
|  | 9.   | In mature insulir     | , which of the peptide is not                |
|  |      | present?              |  |
|  |      | 1) C-peptide          | 2) A and B peptides                          |
|  |      | 3) A-peptide          | 4) B-peptide                                 |
|  | Ans. | 1                     |  |
|  |      |                       |  |
|  |      |                       |  |
|  |      |                       |  |

1) b and c

3) a and b

d) MRI, widal test

a) Radiography, MRI

Ans. 3

- 2. Malignant malaria is caused by
  - 1) Plasmodium falciparum
  - 2) Plasmodium rubrum
  - 3) Plasmodium malariae
  - 4) Plasmodium vivax

#### Ans. 1

- 3. The drug undergon produced
  - 1) Cyclosp

Which of the following are the techniques for

2) b and d

4) a and c

detection of cancer of internal organs?

b) MRI, computed tomography c) Widal test, radiography

- 2) Stain, T
- 3) Cyclosp
- 4) Stain, N

#### Ans. 1

4. Read the correct op

Statemen biological diseases a

Statemen biocontrol 1) Statem correct

2) Both correct

3) Statem

4) Both incorrect

Ans. 2



| 10.  | A scientist wants to produce virus-free plant in<br>tissue culture. Which part of the plant will he<br>use as an explant?<br>a) mature stem b) axillary meristem<br>c) apical meristem d) mesophyll cell<br>Choose the correct option from the following.<br>1) b only 2) c and d 3) a only 4) b and c   | 15.                | <ul><li>With respect to limitation of Ecological pyramids, which of the following statements are correct?</li><li>a) It does not take into account the same species belonging to two or more trophic levels.</li><li>b) It assumes a simple food chain, something that almost never existed in nature.</li></ul> |
|------|--|--------------------|--|
| Ans. |  |                    | <ul><li>c) It accommodates saprophytes.</li><li>d) It does not accommodate a food web.</li></ul>   |
| 11.  | Some strains of Bacillus thuringiensis produce<br>proteins that kill insects. Which one of the<br>following is not killed by proteins of Bacillus<br>thuringiensis?<br>1) Cotton bollworm 2) Tapeworm  | Ans.               | Choose the correct answer from the optionsgiven below.1) c and d2) a, b and d3) a and b4) b and c  |
| Ans. | 3) Tobacco budworm 4) Armyworm 2   | 16.                | The 'Sixth Extinction' of species, presently in  |
| 12.  | Which one of the following population<br>attributes, contributes to increase in<br>population density?<br>1) Natality and Emmigration  | Ans.               | progress, istimes faster than theprevious five episodes of mass extinctions.1) 1000 to 100002) 1 to 103) 10 to 1004) 100 to 10004  |
|      | <ul><li>2) Mortality and Immigration</li><li>3) Natality and Immigration</li></ul>   | 17.                | Species diversity as we move away from   |
| _    | 4) Mortality and Emmigration   |                    | the towards  |
| Ans. | 3  |                    | 1) Decreases, Poles, Equator   |
| 13.  | If 8 individuals in a laboratory population of 80<br>fruit flies died during a specified time interval,<br>the death rate in the population during that<br>period is<br>1) 0.1 individual/time interval<br>2) 1 individual/time interval<br>3) 0.01 individual/time interval<br>4) 0.001 individual/time interval  | <b>Ans.</b><br>18. | <ul> <li>2) Stable, Equator, Poles</li> <li>3) Increases, Equator, Poles</li> <li>4) Decreases, Equator, Poles</li> <li>4</li> <li>In a practical examination, the following pedigree chart was given as a spotter for identification.</li> <li>The students identify the given pedigree chart</li> </ul>        |
| Ans. | 1  |                    | as   |
| 14.  | <ul> <li>Choose the correct sequence of steps involved in decomposition</li> <li>1) Fragmentation → Mineralisation → Humification → Leaching → Catabolism</li> <li>2) Fragmentation → Leaching → Catabolism → Humification → Mineralisation.</li> <li>3) Fragmentation → Catabolism → Leaching → Leaching → Humification → Mineralisation</li> <li>4) Fragmentation → Leaching → Catabolism → Mineralisation → Humification</li> </ul> | Ans.               | 1) Sex-linked dominant<br>2) Sex-linked recessive<br>3) Autosomal dominant<br>4) Autosomal recessive<br>4  |
| Ans. |  | 19.                | A student observed the T.S. of a plant organ<br>slide under microscope. He observed the<br>vascular bundles in the stelar region as<br>conjoint collateral and open. Based on these<br>features of vascular bundle, identify the<br>correct option from below.   |

- 1) Monocot Root2) Monocot Stem
- 3) Dicot Root 4)

4) Dicot Stem



# KCET - 2025 (CODE - B3)

- 20. 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) Metaphase 2) Telophase
  - 3) Prophase

4) Anaphase

Ans. 4

21. Identify the incorrect statement with respect to the rules of Binomial Nomenclature.

1) Biological names are underlined separately when handwritten

2) Biological names are printed in Italics to indicate their non-Latin origin.

3) The first word represents the genus while second component denotes the specific epithet4) Biological names are generally in Latin or Latinised irrespective of their origin

#### Ans. 2

22. Match Column-I with Column-II and choose the correct option given below:

|    | Column-I   |      | Column -II                  |
|----|------------|------|-----------------------------|
|    | (Bacteria) |      | (Shape)                     |
| a) | Coccus     | i)   | Rod-shaped                  |
| b) | Bacillus   | ii)  | Spiral                      |
| c) | Vibrium    | iii) | Spherical                   |
| d) | Spirillum  | iv)  | Comm <mark>a-shap</mark> ed |

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

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

#### Ans. 4

23. 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) Statement I is false but Statement II is true
- 2) Both Statement I and Statement II are false
- 3) Both Statement I and Statement II are true
- 4) Statement I is true but Statement II is false

#### Ans. 1

- 24. 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 \_\_\_\_\_.
  - Pterophyllum
     Trygon
     Balanoglossus
     Ophiura

Ans. 3

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



- 4) a-Imbricate, b-Valvate, c-Vexillary,
- d Twisted

0.1

#### Ans. 1

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

0.1

|       | Column–I  |      | Column–II    |
|-------|---|------|--------------|
|       | (characteristics of                                 |      | (Transverse  |
|       | vascular bundle                                     |      | section)     |
|       |   |      |              |
| a)    | Radial, tetrarch,                                   | i)   | T.S of       |
|       | cambial   |      | monocot      |
|       | ring between xylem and                              |      | stem         |
|       | p <mark>h</mark> loem at <mark>l</mark> ater stages |      |              |
| _b) _ | Conjoint, open and                                  | ii)  | T.S of dicot |
|       | endarch   |      | root         |
| c)    | Radial, Polyarch, large                             | iii) | T.S of       |
|       | pith without cambial                                |      | monocot toot |
|       | ring  |      |              |
| d)    | Conjoint, closed with                               | iv)  | T.S of dicot |
|       | sclerenchymatous                                    |      | stem         |
|       | bundle sheath                                       |      |              |
|       | 1) $a - ii b - iv c - iii d - i$                    |      |              |

- 1) a ii, b iv, c iii, d i
- 2) a iii, b iv, c i, d ii
- 3) a-i, b-ii, c-iii, d-iv
- 4) a ii, b iii, c iv, d i

#### Ans. 1

27. 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 c
2) b and d
3) a and d
4) a and b



- The reserve material in prokaryotic cells are stored in the cytoplasm in the form of
  - 1) Exclusion and inclusion bodies
  - 2) Fat bodies
  - 3) Exclusion bodies
  - 4) Inclusion bodies

- 29. The cell wall less prokaryote among the following is
  - Cyanobacteria
     Mycoplasma
     Bacteria
     Blue-Green Algae
- Ans. 2
- 30. 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-High temperature, High activation

energy, N-Low temperature, Low activation energy

2) M-High substrate, High activation energy,

- N-Low substrate, Low activation energy
- 3) A-Activation energy without enzyme,
- N-Activation energy with enzyme
- 4) M-Activation energy with enzyme,
- N –Activation energy without enzyme

# Ans. 3

31. 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) Zygote     | 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-iv, b-i, c-ii, d-iii, e-v 2) a-ii, b-iv, c-i, d-iii, e-v 3) a-i, b-ii, c-iii, d-iv, e-v 4) a-v, b-iv, c-i, d-iii, e-ii

#### Ans. 2

- 32. 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) Statement I is false but Statement II is true 2) Both Statemen I and Statement II are false 3) Both Statement I and Statement II are true 4) Statement I is true but Statement II is false Ans. 1 or 2
- 33. The TCA cycle starts with the condensation of acetyl group with
  - 1)  $\alpha$  -Ketoglutaric acid 2) Succinic acid
  - 3) Oxaloacetic acid 4) Citric acid

# Ans. 3

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

| Colum     | n-I                      | Col                        | umn-II                    |
|-----------|--------------------------|----------------------------|---------------------------|
| a) Abso   | cisi <mark>c</mark> acid | i) A                       | denine derivative         |
| b) Gibl   | ber <mark>e</mark> llins | ii) I                      | ndole acetic acid         |
| c) Kine   | etin                     | iii) Carotenoid derivative |                           |
| d) Aux    | in                       | iv) Terpenes               |                           |
| 1) a-iii, | b-iv, c-i, d             | l–ii                       | 2) a-iii, b-i, c-ii, d–iv |
| 3) a-i, b | -ii, c-iii, d            | –iv                        | 4) a-iii, b-i, c-iv, d–ii |

# Ans. 1

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

# Ans. 1

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



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

38. In the mechanism of muscle contraction or shortening of muscle, the \_\_\_\_\_ get reduced whereas the \_\_\_\_\_ retain the length.

1) Z line, I bands 2) A bands, Z line

3) A bands, I bands 4) I bands, A bands

#### Ans. 4

39. Identify the correct sequence of action potential as it arrives at the axon terminal from the choices given below:

1) Axon terminal  $\rightarrow$  Post-synaptic membrane  $\rightarrow$  Synaptic cleft  $\rightarrow$  Synaptic vesicles Postsynaptic neuron

2) Axon terminal  $\rightarrow$  Synaptic vesicles  $\rightarrow$  Postsynaptic membrane  $\rightarrow$  Synaptic cleft  $\rightarrow$ Post-synaptic neuron

3) Axon terminal  $\rightarrow$  Synaptic vesicles  $\rightarrow$ Synaptic cleft  $\rightarrow$  Post-synaptic membrane  $\rightarrow$ Post-synaptic neuron

4) Axon terminal → Synaptic cleft →
 Synaptic vesicles → Post-synaptic neuron →
 Post-synaptic membrane

# Ans. 3

40. Identify the statement/s given below that does not correspond to the functions of cortisoli) Maintains cardiovascular system and kidney functions

iii) Produces anti-inflammatory reactions

iii) Maintains electrolyte balance, osmosis and blood pressure

- iv) Suppresses immune response
- v) Stimulates RBC production
- 1) iii only 2) iv only
- 3) i and ii only 4) iii and iv only

# Ans. 1

- 41. When pollen grains of a flower of plant pollinate the stigma flower of another plant, it is called1) Dichogamy 2) Geitonogamy
  - 1) Dichogamy2)3) Xenogamy4
    - 4) Autogamy

Ans. 3

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

#### Ans. 4

43. Which of these options is true in the context of the below diagram of pollen grain?



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

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

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

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

Match the hormone with its site of production:

#### Ans. 2

44.

| 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-iv, b-i, c-ii, d-iii | 2) a-i, b-ii, c-iv, d-iii |
| 3) a-ii, b-iii, c-iv, d-i | 4) a-iii, b-i, c-iv, d-ii |

#### Ans. 3

45. Choose the correct sequence of sperm transport during ejaculation 1) Seminiferous tubules  $\rightarrow$  vasa efferentia  $\rightarrow$ rete testis  $\rightarrow$  epididymis  $\rightarrow$  vas deferens  $\rightarrow$ ejaculatory duct 2) Seminiferous tubules  $\rightarrow$  rete testis  $\rightarrow$ epididymis  $\rightarrow$  vas deferens  $\rightarrow$  vasa efferentia  $\rightarrow$  ejaculatory duct 3) Seminiferous tubules  $\rightarrow$  rete testis  $\rightarrow$  vasa efferentia  $\rightarrow$  epididymis  $\rightarrow$  vas deferens  $\rightarrow$ ejaculatory duct 4) Seminiferous tubules  $\rightarrow$  rete testis  $\rightarrow$ epididymis  $\rightarrow$  vasa efferentia  $\rightarrow$  vas deferens  $\rightarrow$  ejaculatory duct Ans. 3



# KCET - 2025 (CODE - B3)

- Select the mismatched pair: 51. 46. 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 Ans. 1 d) Sixth month of pregnancy -Eye lids separate and eye lashes are formed 52. 1) c 2) d 3) a 4) b Ans. 4 Ans. 4 47. Out of the following options, identify which one is NOT a natural method of contraception? 1) Lactational amenorrhea 53. 2) Periodic abstinence 3) Coitus interruptus 4) Implants Ans. 4 48. In zygote intrafallopian tube transfer, the embryo upto \_ \_\_\_\_stage is transferred into the fallopian tube 1) 8 blastomeres 2) 32 blastomeres 3) 2blastomeres 4) 16 blastomeres Ans. 1 49. Read the following statements: Statements -I : MTP is to get rid off wanted pregnancies due to causal unprotected intercourse or failure of contraceptives used during coitus or rapes Statements -II: MTPs are performed legally by Ans. 1 qualified doctors by giving proper medical justification 54. Choose the correct answer from the options given below: 1) Statements -I is correct but Statements -II is incorrect Ans. 1 2) Statements -I is incorrect but Statements -II is correct 55. 3) Statements -I and II are correct 4) Statements -I and II are incorrect Ans. 2 Ans. 4 How may types of gametes will be formed by a 50. parent with genotype 'AaBbCc'? 1) 8 2) 12 3) 6 4) 4 Ans. 1
- - 4) Incomplete dominance

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

| rome  |
|-------|
|       |
| a in  |
|       |
| uline |
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| with  |
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|       |
| n X-  |
|       |
|       |
|       |

- - 3) tRNA 4) rRNA
- 55. Which of the following enzymes increases the permeability of the bacterial cell to lactose?1) Transacetylase 2) Amylase
  - 3)  $\beta$ -galactosidase 4) Permease



- 56. Which of the following statements are correct
  - with reference to prokaryotic genome?
  - a) Monocistronic structural genesb) 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, d and e are correct
  - 2) Only a, d and e are correct
  - 3) Only a, b and d are correct
  - 4) Only b, c and e are correct

- 57. When a change in the gene frequency of population occurs by chance, it is called \_\_\_\_\_
  - 1) Genetic recombination
  - 2) Genetic drift
  - 3) Founder effect
  - 4) Gene migration

# Ans. 2

- 58. Darwin's finches represent one of the best examples of \_\_\_\_\_
  - 1) Chemical evolution 2) Genetic equilibrium
  - 3) Seasonal migration 4) Adaptive radiation

# Ans. 4

- 59. Choose the correct statement 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 d are correct
  - 2) a, c and d are correct
  - 3) a, b and e are correct
  - 4) a, c and e are correct

# **Ans.** 1

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



INDIVIDUAL ATTENTION, CARING AND MOTIVATION. WEEKLY, CUMMULATIVE AND GRAND TESTS IN THE NEET & JEE PATTERN

