KARNATAKA COMMON ENTRANCE EXAMINATION

BIOLOGY SAMPLE PAPER

1. Assimilatory power is
   1) $NADPH_2$ 2) ATP 3) ATP and $NADPH_2$ 4) $FADH_2$

Ans: (3) ATP & $NADPH_2$
Formed during light reaction

2. ECORI cleaves the DNA strands to produce
   1) Blunt ends 2) Sticky ends 3) Satellite ends 4) Ori replication end

Ans: (2) Sticky ends
Recognition site of ECOR, is GAATTC CTTAAG

3. Read the statements (A) and (B) and identify the correct choice from those given:
   Statement (A): Women are at the peak of conception on the 14^{th} day of ovulation.
   Statement (B): Vasectomy is the method normally employed to avoid conception in females.
   1) Statement (A) is wrong, (B) is right 2) Statement (A) is right, (B) is wrong
   3) Both the statements are right 4) Bo the statements are wrong

Ans: (2)

4. The sequence of nitrogenous bases in one strand of DNA are 3′ TAC GCG ACG 5′. The complementary DNA strand should have
   1) 5′ AUG CGC TGC 3′ 2) 3′ ATG CGC TGC 5′
   3) 5′ UAC GCG ACG 3′ 4) 5′ ATG CGC TGC 3′

Ans: (4) 5′ ATG CGC TGC 3′

5. Which one of the following statement is correct regarding spinal cord?
   1) It is composed of outer grey matter and inner white matter
   2) It is composed of outer white matter and inner grey matter
   3) It is composed of outer grey matter and inner colourless matter
   4) It is composed of grey matter only

Ans: (2) It is composed of outer white matter and inner grey matter

6. Match the entries in Column I with those of Column II and choose the correct answer

	Column – I		Column – II
(A)	Restriction endonucleases	**(P)**	Kohler and Milstein
(B)	Polymerase chain reaction	**(Q)**	Alec Jeffreys
(C)	DNA fingerprinting	**(R)**	Arber
(D)	Monoclonal antibodies	**(S)**	Karry Mullis

   1) (A) – (R); (B) – (S); (C) – (Q); (D) – (P) 2) (A) – (R); (B) – (Q); (C) – (S); (D) – (P)
   3) (A) – (Q); (B) – (R); (C) – (S); (D) – (P) 4) (A) – (Q); (B) – (S); (C) – (R); (D) – (Q)

Ans: (1) (A) – (R); (B) – (S); (C) – (Q); (D) – (P)

7. Which taxonomic term may be suggested for any rank in the classification?
   1) Class 2) Order 3) Species 4) Taxon

Ans: (4) Taxon

8. In one of the techniques of recombinant insulin production the genes for α and β polypeptides were inserted into the plasmid by the side of
   1) Antibiotic resistance gene 2) Lac z promoter gene
   3) β galactosidase gene 4) Ori

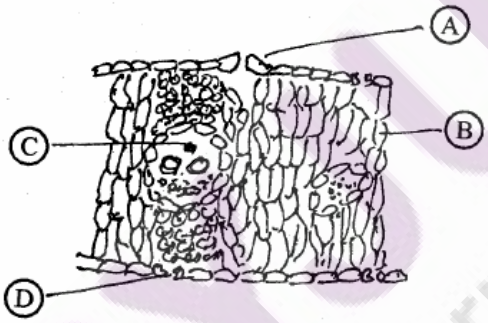
Ans: (2) Lac z promoter gene

9. Which one does not belong to monera?
   1) Slime moulds 2) Mycoplasma 3) Eubacteria 4) Archaebacteria

Ans: (1) Slime moulds

It is a member of protista

10. The diagram given below represents the T. S. of dicot leaf. Identify the parts labelled as A, B, C and D, which denote their functions and choose the correct one given below:



   1) A : Motor action ; B : Photosynthesis; C : Conduction ; D : Transpiration
   2) A : Motor action ; B : Conduction ; C : Photosynthesis ; D : Transpiration
   3) A : Transpiration ; B : Photosynthesis; C : Conduction ; D : Transpiration
   4) A : Transpiration; B : Conduction; C : Photosynthesis; D : Motor action

Ans: (1) A : Motor action ; B : Photosynthesis; C : Conduction ; D : Transpiration

In the diagram, between motor cells gap has shown. It look like guard cell. Diagram is not clear.

11. Which of the following tissue is not a component of a complex tissues?
   1) Parenchyma 2) Collenchyma 3) Sclerenchyma 4) Tracheids

Ans: (2)

12. Mosses and ferns are
   1) Thallophytes of plant kingdom 2) Angiosperms of plant kingdom
   3) Gymnosperms of plant kingdom 4) Amphibians of plant kingdom

Ans: (1) Thallophytes of plant kingdom

Moss is Bryophyte

Ferm is Pteridophyte

13. Plasmodermata is usually observed between
1) Sieve tubes and Bast fibre 2) Trachea and Phloem fibres
3) Xylem parenchyma and xylem fibres 4) Sieve tubes and companion cells

Ans: (4) Sieve tubes and companion cells

14. The embryo sac of an angiosperm is made up of
1) 8 cells 2) 7 cells and 8 nuclei
3) 8 nuclei 4) 8 cells and 7 nuclei

Ans: (2) 7 cells and 8 nuclei

15. Cork Cambium of dicot stem originates from
1) Dedifferentiated parenchyma cells of cortex
2) Dedifferentiated collenchyma cells of cortex
3) Parenchyma cells of medullary ray
4) Parenchyma cells of pericycle

Ans: (2) Dedifferentiated collenchyma cells of cortex

16. Match the words of Column I with that of Column II and choose the correct answer given below:

	Column – I		**Column – II**
(A)	Algae	**(P)**	Gymnosperms
(B)	Riccia	**(Q)**	Pond scum
(C)	Spirogyra	**(R)**	Autotrophic
(D)	Gnetum	**(S)**	Liverwort

1) (A) – (R); (B) – (S); (C) – (Q); (D) – (P) 2) (A) – (P); (B) – (S); (C) – (Q); (D) – (R)
3) (A) – (S); (B) – (P); (C) – (R); (D) – (Q) 4) (A) – (R); (B) – (Q); (C) – (S); (D) – (P)

Ans: (1) (A) – (R); (B) – (S); (C) – (Q); (D) – (P)

Riccia is an example for bryophyte

17. The opening and closing of stomata are controlled by the activity of
1) Guard cells 2) Epidermal cells 3) Mesophyll cells 4) Lenticels

Ans: (1) Guard cells

Both K^+ pump theory and starch hydrolysis theory explain the stomatal movement.

18. In which of these following phyla given as the adult shows radial symmetry, the larva shows bilateral symmetry?
1) Annelids 2) Arthropods 3) Molluscs 4) Echinodermata

Ans: (4) Echinodermata

(1), (2) and (3) have bilaterally symmetrical adults.

19. A thin film of water covering the soil particles and held strongly by attractive forces is called
1) Run away 2) Hygroscopic 3) Gravitational 4) Capillary

Ans: (2) Hygroscopic

It is not available for absorption

20. Which one of the following groups of 3 animals each is correctly matched with their one characteristic morphological features?

	Animals		Morphological features
1	Centipede, Prawn, Sea urchin	-	Jointed appendages
2	Cockroach, Locust, Taenia	-	Metameric segmentation
3	Scorpion, Spider, Cockroach	-	Ventral solid nerve cord
4	cucumber	-	Bilateral symmetry

Liverfluke, Sea anemone, Sea

Ans: (3)

All are non-chordates

21. Consider the following statements and select the correct one:
Statement (A): Pure water maximum water potential.
Statement (B): The osmotic potential is zero in pure water.
(1) Both statements are correct and (B) is not the reason for (A).
(2) Both statements are wrong.
(3) Both statements are correct and (B) is the reason for (A).
(4) Both statements are correct.

Ans: (3)

Water potential decreases as the solute concentration increases.

22. A bivalent of meiosis I consist of
(1) Four chromatids and two centromeres
(2) Two chromatids and one centromeres
(3) Two chromatids and two centromeres
(4) Four chromatids and four centromeres

Ans: (1) Four chromatids and two centromeres

i.e., two double stranded chromosomes become pairs. It is called synapsis.

23. Electrons from excited chlorophyll molecules of photosystem II are accepted first by
(1) Ferredoxin (2) Pheophytin (3) Cytochrome b (4) Cytochrome f

Ans: (2) Pheophytin

It is the primary electron acceptor of PS II

24. Match the following lists of animals with their level of organization and choose the correct sequence.

	Column – I		Column - II
(A)	Organ level	**(P)**	Pheritima
(B)	Cellular aggregate level	**(Q)**	Fasciola
(C)	Tissue level	**(R)**	Spongilla
(D)	Organ system level	**(S)**	Obelia

(1) A – S, B – R, C – P, D – Q
(2) A – S, B – Q, C – R, D – P
(3) A – Q, B – S, C – R, D – P
(4) A – Q, B – R, C – S, D - P

Ans: (4)

Obelia is coelenterate. Hence it is tissue grade.

25. Oxidative decarboxylation occurs during the formation of
(1) Citric acid and Succinic acid
(2) Citric acid and Oxaloacetic acid
(3) Acetyl CoA and Succinyl CoA
(4) Oxaloacetic acid and Oxalosuccinic acid

Ans: (3)

Both the steps release CO_2.

26. The edible part of the fruit of apple is
(1) Endocarp (2) Thalamus (3) Pericarp (4) Perianth

Ans: (2) Thalamus

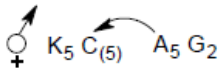
27. Given below is an electron acceptor. Mention its status, which is labelled as (A)

$Cyt^{++} \xrightarrow{2e} Cyt^{++}$ (A)

(1) Oxidised (2) Reduced (3) Phosphorylation (4) Hydrated

Ans: (2) Reduced

Donor is oxidized and recipient is reduced.

28. The Floral formula  is that of
(1) Hibiscus (2) Banana (3) Tulip (4) Vinca

Ans: (4) *Vinca*

i.e., bicarpellary condition

29. Interferons are the proteins molecules produced from the
(1) Normal cells (2) Infected host cells
(2) Macrophages (4) B. Lymphocytes

Ans: (2) Infected host cells

30. Tikka is a
(1) Fungal disease (2) Viral disease (3) Bacterial disease (4) Protozoan disease

Ans: (1) Fungal disease

i.e., *Cercospora personata* (Deuteromycete)

31. Which of the statements is correct?
(1) Each back cross is a test cross.
(2) Each test cross is a back cross
(3) Crossing F_2 with F_1 is a test cross
(4) Crossing F_2 with P_1 is called a test cross

Ans: (2)

32. Amrithmahal is a/an
(1) Dual purpose breed (2) Exotic breed
(3) Cross breed (4) Drought breed

Ans: (1)

33. Gynecomastica is the symptom of
(1) Klinefelter's syndrome (2) Down's syndrome
(2) Turner's syndrome (4) Cri-du-chat syndrome

Ans: (1)

34. The branch of biology that deals with study of fossil animals is known as
(1) Para biology (2) Phylogeny (3) Paleontology (4) Para zoology

Ans: (3)

35. A colourblind man marries the daughter of another colourblind man whose wife had a normal genotype for colour vision. In their progeny.
(1) All the children would colourblind.
(2) All their sons are colourblind.
(3) None of the daughters would be colourblind.
(4) Half of their sons and half of their daughters would be colourblind .

Ans: (4)

36. The plants which have antidiabetic properties
(1) Ocimum sanctum (3)Gymnema sylvestre
(2) Adathoda vasica (4) Phyllantus emblica

Ans: (2)

37. Deforestation means
(1) growing plants and trees in an area where there is no forest.
(2) growing plants and trees in an area where the forest is removed.
(3) growing plants and trees in a pond.
(4) removal of plants and trees.

Ans: (4)

38. Lysosomes are produced by
(1) Golgi complex (2) Mitochondria
(3) Endoplasmic reticulum (4) Leucoplasts

Ans: (1)

39. Kokkarebellur Bird Sanctuary is noticed in
(1) Mandya (2) Mysore (3) Chamarajanagar (4) Hassan

Ans: (1)

40. One of the following is also called Sewall Wright effect.
(1) Isolation (2) Gene pool (3) Genetic drift (4) Gene flow

Ans: (3)

41. Oran is a
(1) Sacred groove (2) Sacred landscape (3) Sacred animal (4) Endangered animal

Ans: (1)

42. Put the following parts of a reflex arc in the correct order beginning with the sensory receptor:
(A) Motor neutron (B) Interneuron (C) Effector
(D) Sensory neuron (E) Sensory receptor
(1) (E) (D) (B) (A) (C) (2) (E) (D) (A) (B) (C)
(3) (A) (B) (C) (D) (E) (4) (A) (E) (D) (B) (C)

Ans: (1)

43. The trachea terminates into
(1) Bronchial Tree (2) Atrium (3) (Bronchi (4) (Alveoli

Ans: (4)

44. Match the entries in Column – I with those of Column – II and choose the correct answer given below:

	Column – I		Column – II
(A)	FSH	**(P)**	Normal growth
(B)	GH	**(Q)**	Ovulation
(C)	Prolactin	**(R)**	Parturition
(D)	Oxytocin	**(S)**	Water diuresis
		(T)	Milk secretion

(1) A – Q, B – P, C – T, D – R (2) A – Q, B – P, C – T, D – S
(3) A – P, B – T, C – R, D – Q (4) A – Q, B – T, C – S, D – R

Ans: (1)

45. Formation of activation calyx in the egg takes place
(1) Before fertilization (2) After fertilization
(3) At the time of Cleavage (4) At the time of Amphimixis

Ans: (2)

46. Which of the following part of Cockroach leg is attached to thorax ventrally?
(1) Trochanter (2) Claw (3) Femur (4) Coxa

Ans: (4)

47. Match the entries in Column – I with those of Column – II and choose the correct answer?

	Column – I		Column – II
(A)	Cytokinins	**(P)**	Stress hormone
(B)	Auxins	**(Q)**	Ripening of fruits
(C)	Abscisic acid	**(R)**	Apical dominance
(D)	Ethylene	**(S)**	Bolting
		(T)	Richmond Lang effect

(1) A – T, B – R, C – P, D – Q (2) A – T, B – R, C – T, D – S
(3) A – R, B – S, C – Q, D – P (4) A – Q, B – Q, C – T, D – R

Ans: (1)

48. Left auricle receives pure blood from the
(1) Pulmonary veins (2) Pulmonary artery
(3) Superior venacava (4) Inferior venacava

Ans: (1)

49. The semi-digested food that moves down the oesophagus is known as
(1) bolus (2) Chyme (3) Rugae (4) Protein

Ans: (1)

50. During the transportation gases, to maintain the ionic balance chloride ions shifts from
(1) RBC's to plasma (2) Plasma to RBC (3) Lungs to blood (4) Blood to lungs

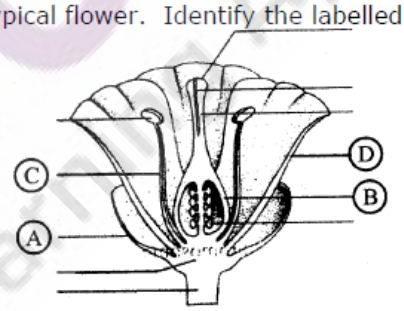
Ans: (2)

51. Read the statements (A) and (B). Choose the right one:
Statement (A): Atherosclerosis is a disease characterized by the thickening of arterial walls.
Statement (B): Deposition of cholesterol and triglycerides in the arterial walls causes atherosclerosis.
(1) Statement (A) is correct, (B) is wrong
(2) Both the statements are correct but not related to each other.
(3) Both the statements are correct and (B) is the reason for (A)
(4) Both the statements are wrong
Ans: (3)

52. Juxtaglomerular cells $\xrightarrow{(A)}$ when there is a fail in $\xrightarrow{(B)}$ ion concentration.
Choose the correct pair labeled as A and B.
(1) A: Renin B: Chloride
(2) A: Carbonic unhydrase B: Sodium
(3) A: ATPase B: Potassium
(4) A: Renin B: Sodium
Ans: (4)

53. Ileocaecal valve is present in between
(1) Colon and large intestine
(2) Colon and small intestine
(3) Stomach and small intestine
(4) Cardiac stomach and fundus
Ans: (2)

54. The diagram given below denotes the various parts of a typical flower. Identify the labelled parts A, B, C and D and choose the correct option.



(1) A = Petals, B = Sepals, C = Stamens, D = Pistil
(2) A = Sepals, B = Pistil, C = Petals, D = Stamens
(3) A = Sepals, B = Pistil, C = Petals, D = Petals
(4) A = Sepals, B = Petals, C = Pistil, D = Stamens
Ans: (3)

55. Read the statements A and B identify the correct choice from those given below:
Statement (A): The egg of frog is moderately telolecithal
Statement (B): Sooner (or) later the cleavage pattern becomes irregular.
(1) Statement (A) is correct, (B) is wrong
(2) Statement (B) is correct, (A) is wrong
(3) Both the statements (A) and (B) are correct.
(4) Statement (A) is the reason fro statement (B).
Ans: (4)

56. The most unstable RNA is
(1) Messenger RNA
(2) Soluble RNA
(3) Ribosomal RNA
(4) Heterogeneous nuclear RNA
Ans: (1)

57. Chose the right one which denotes genetic diversity.
(1) Chromosomes – nucleotides – genes – individuals – populations
(2) Populations – individuals – chromosomes – nucleotides – genes
(3) Genes – nucleotides – chromosomes – individuals – populations
(4) Nucleotides – genes – chromosomes – individuals – populations
Ans: (4)

58. The portion of an Eukaryotic gene which is transcribed but not translated is
(1) Exon (2) Intron (3) Cistron (4) Codon

Ans: (2)

59. The appearance of chancre, rashes all over the body are the symptoms of
(1) Gonorrhoea (2) Aids (3) Syphilis (4) Fever

Ans: (3)

60. Read the statements (A) and (B). Choose the right one.
Statement (A): Synthesis of mRNA takes place in 5′ – 3′ direction.
Statement (B): Reading of mRNA is always in 3′ – 5′ direction.
(1) Both the statements are wrong.
(2) Statement (A) is wrong, (B) is correct
(3) Statement (B) is wrong, (A) is correct
(4) Both the statements (A) and (B) are correct

Ans: (3)