COMMON ENTRANCE TEST - 2011

DATE	SUBJECT	TIME
27-04-2011	BIOLOGY	10.30 AM to 11.50 AM

MAXIMUM MARKS	TOTAL DURATION	MAXIMUM TIME FOR ANSWERING
60	80 MINUTES	70 MINUTES

MENTION YOUR CET NUMBER	QUESTION BOOKLET DETAILS	
	VERSION CODE	SERIAL NUMBER
	A - 1	222833

DOs :

1. Check whether the CET No. has been entered and shaded in the respective circles on the OMR answer sheet.
2. This Question Booklet is issued to you by the Invigilator after the **2nd Bell**, i.e., after **10.30 a.m.**
3. The Serial Number of this question booklet should be entered on the OMR answer sheet.
4. The Version Code of this question booklet should be entered on the OMR answer sheet and the respective circles should be shaded completely.
5. Compulsory sign at the bottom portion of the OMR answer sheet in the space provided.

DON'Ts :

1. **The timing and marks printed on the OMR answer sheet should not be damaged/mutilated/spoiled.**
2. The **3rd Bell** rings at **10.40 a.m.** till then;
   - Do not remove the seal/staple present on the right hand side of this question booklet.
   - Do not look inside this question booklet.
   - Do not start answering on the OMR answer sheet.

IMPORTANT INSTRUCTIONS TO CANDIDATES

1. This question booklet contains 60 questions and each question will have one statement and four distracters (four different options / choices).
2. After the **3rd Bell** is rung at **10.40 a.m.**, remove the seal/staple present on the right hand side of this question booklet and start answering on the OMR answer sheet.
3. During the subsequent 70 minutes :
   - Read each question carefully.
   - Choose the correct answer from out of the four available distracters (options/choices) given under each question/statement.
   - Completely **darken/shade** the relevant circle with a **BLUE OR BLACK INK BALLPOINT PEN against the question number on the OMR answer sheet.**

CORRECT METHOD OF SHADING THE CIRCLE ON THE OMR SHEET IS AS SHOWN BELOW :

4. Please note that even a minute unintended ink dot on the OMR sheet will also be recognized and recorded by the scanner. Therefore, avoid multiple markings of any kind on the OMR answer sheet.
5. Use the space provided on each page of the question booklet for Rough Work. Do not use the OMR answer sheet for the same.
6. After the **last bell** is rung at **11.50 a.m.**, stop writing on the OMR answer sheet and affix your LEFT HAND THUMB IMPRESSION on the OMR answer sheet as per the instructions.
7. Hand over the OMR answer sheet to the room Invigilator as it is.
8. After separating and retaining the top sheet (KEA Copy), the Invigilator will return the bottom sheet replica (Candidate's copy) to you to carry home for self-evaluation.
9. Preserve the replica of the OMR answer sheet for a minimum period of ONE year.

BIOLOGY

1. Four children belonging to the same parents have the following blood groups A, B, AB and O. Hence, the genotypes of the two parents are .....

   1) Both parents are homozygous for 'A' group
   2) One parent is homozygous for 'A' and another parent is homozygous for 'B'
   3) One parent is heterozygous for 'A' and another parent is heterozygous for 'B'
   4) Both parents are homozygous for 'B' group

2. Mitotic stages are not observed in .....

   1) Cosmarium 2) E.coli
   3) Saccharomyces 4) Chlorella

3. The types of ribosomes found in prokaryotic cell are .....

   1) 100 S 2) 80 S
   3) 60 S 4) 70 S

4. The name of Smt. Thimmakka is associated with the .....

   1) planting and conservation of avenue trees
   2) agitations against hydroelectric project
   3) 'Appiko' movement
   4) conservation of fauna and flora of the western ghats

5. Dog distemper is a disease carried by a .....

   1) bacterium 2) viroid
   3) prion 4) virus

(Space for Rough Work)

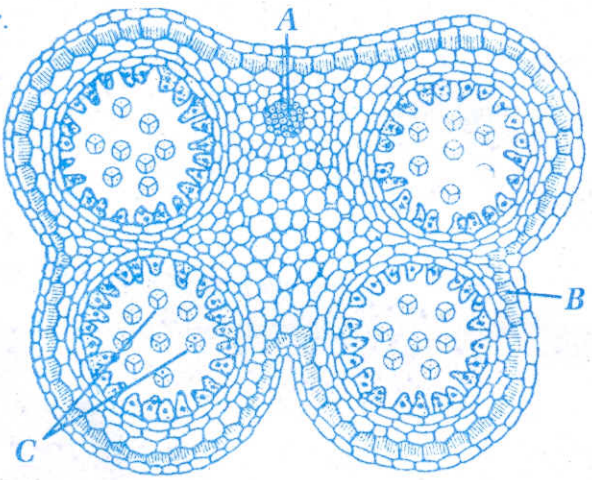
6. When a fresh water protozoan is placed in marine water, ...

1) the contractile vacuole disappears
2) the contractile vacuole increases in size
3) a number of contractile vacuoles appear
4) the contractile vacuole remains unchanged

7. The 2005 Nobel Prize for Physiology/Medicine was awarded to Barry Marshall and Robin Warren of Australia for their discovery of .....

1) human papilloma virus causing cervical cancer
2) bacterium helicobacter pylori causing peptic ulcer
3) prions, a new biological principle of infection
4) Human Immunodeficiency Virus

8. The following is the diagram of T.S. of Anther. Identify the parts labelled *A, B, C.*



1) *A* = Connective, *B* = Endothecium, *C* = Pollen grain
2) *A* = Endothecium, *B* = Connective, *C* = Pollen grain
3) *A* = Pollen grain, *B* = Connective, *C* = Endothecium
4) *A* = Endothecium, *B* = Pollen grain, *C* = Connective

9. Pick the mammal with true placenta :

1) Kangaroo
2) Echidna
3) Platypus
4) Mongoose

10. Which one of the following is correct?

1) Introns are present in m-RNA and exons are present in t-RNA.
2) Codons are present in m-RNA and anticodons in t-RNA.
3) Every intron is a set of three terminator codons.
4) Exons are present in eukaryotes while introns are present in prokaryotes.

(Space for Rough Work)

11. Casparian strips are present in the ..... of the root.
    1) epiblema 2) cortex
    3) pericycle 4) endodermis

12. How do you differentiate a frog from a toad?
    1) Frog has no exoskeleton but toad has scales.
    2) Frog respires through lungs but toad respires through skin.
    3) Frog has a tail but toad has no tail.
    4) Frog has no parotid glands but toad has a pair of parotid glands.

13. Column I contains larval stages and column II contains the group to which it belongs. Match them correctly and choose the right answer.

	Column I		Column II
A	Planula	p	Annelida
B	Tornaria	q	Mollusca
C	Trochophore	r	Arthropoda
D	Bipinnaria	s	Chordata
E	Glochidium	t	Echinodermata
		u	Coelenterata

    1) A = u, B = s, C = p, D = t, E = q 2) A = q, B = t, C = p, D = s, E = u
    3) A = t, B = s, C = r, D = q, E = p 4) A = s, B = r, C = q, D = p, E = t

14. Read the following statements *A* and *B*.
    A : Many organs of aquatic plants float in water.
    B : Large air gaps are present in the collenchyma tissues of lotus leaf.
    Select the correct answer.
    1) Statement *A* is correct and *B* is wrong.
    2) Statement *B* is correct and *A* is wrong.
    3) Statements *A* and *B* both are correct.
    4) Statements *A* and *B* both are wrong.

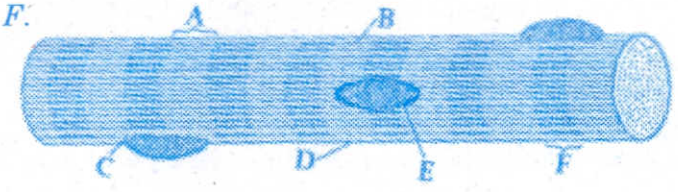
15. Arrange the following in the ascending order of Linnaean hierarchy.
    1) Kingdom – order – species – genus – class – family – phylum.
    2) Kingdom – family – genus – species – class – phylum – order.
    3) Kingdom – phylum – class – order – family – genus – species.
    4) Species – genus – family – order – class – phylum – kingdom.

(Space for Rough Work)

16. Animals which possess cleidoic eggs exhibit.

1) External fertilization and internal development
2) Internal fertilization and internal development
3) Internal fertilization and external development
4) External fertilization and external development

17. The diagram given below represents the histology of a striped muscle. Label the parts *A, B, C, D, E* and *F*.



1) *A* – Sarcoplasm, *B* – Nucleus, *C* – Sarcolemma, *D* – Myofibril, *E* – Dark band, *F* – Light band.
2) *A* – Sarcoplasm, *B* – Light band, *C* – Myofibril, *D* – Sarcolemma, *E* – Nucleus, *F* – Dark band.
3) *A* – Light band, *B* – Sarcoplasm, *C* – Myofibril, *D* – Sarcolemma, *E* – Nucleus, *F* – Dark band.
4) *A* – Sarcolemma, *B* – Nucleus, *C* – Dark band, *D* – Light band, *E* – Sarcoplasm, *F* – Myofibril.

18. Populations are said to be allopatric when .....

1) they are physically isolated by natural barriers
2) they are sharing the same area but cannot interbreed
3) they live together and breed freely to produce viable offspring
4) they are isolated but often come together for breeding

19. The World Intellectual Property Day is observed on .....

1) February, 29th
2) June, 30th
3) April, 26th
4) September, 5th

20. Which one of the following is an example of chlorophyllous thallophyte?

1) Volvarialla
2) Spirogyra
3) Nephrolepis
4) Gnetum

(Space for Rough Work)

21. Pinus belongs to the class .....

1) Gnetopsida 2) Cycadopsida
3) Coniferopsida 4) Sphenopsida

22. With reference to enzymes, which one of the following statements is true?

1) Apoenzyme = Holoenzyme + Coenzyme
2) Holoenzyme = Apoenzyme + Coenzyme
3) Coenzyme = Apoenzyme + Holoenzyme
4) Holoenzyme = Coenzyme – Apoenzyme

23. Gametophyte is the dominant phase in the lifecycle of .....

1) Hibiscus 2) Nephrolepis
3) Cycas 4) Riccia

24. In a typical Mendelian cross which is a dihybrid cross, one parent is homozygous for both dominant traits and another parent is homozygous for both recessive traits. In the f_2 generation, both parental combinations and recombinations appear. The phenotypic ratio of parental combinations to recombinations is .....

1) 10 : 6 2) 12 : 4
3) 9 : 7 4) 15 : 1

25. A balanced diet does NOT include .....

1) Carbohydrates and fats 2) Nucleic acids and enzymes
3) Proteins and vitamins 4) Minerals and salts

(Space for Rough Work)

26. Match the types of the fruits listed in column I, with the examples listed in column II. Choose the answer which gives the correct combination of alphabets of the two columns.

	Column I		Column II
A	Capsule	p	Paddy
B	Berry	q	Mango
C	Drupe	r	Sunflower
D	Cypsela	s	Tomato
		t	Ladies finger

1) A = t, B = s, C = q, D = r
2) A = t, B = r, C = p, D = q
3) A = s, B = t, C = q, D = r
4) A = p, B = q, C = r, D = t

27. In genetic code, 61 codons code for 20 different types of amino acids. This is called

1) Colinearity
2) Commaless
3) Degeneracy
4) Nonambiguity

28. By the statement 'survival of the fittest', Darwin meant that .....

1) The strongest of all species survives
2) The most intelligent of the species survives
3) The cleverest of the species survives
4) The most adaptable of the species to changes survives

29. Which one of the following plants is considered as lesser known species of food crops?

1) Psophocarpus tetragonolobus
2) Sorghum Vulgare
3) Eleusine Coracana
4) Pennisetum typhoides

30. When 2 to 3 drops of Benedicts reagent are added to a urine sample and heated gently, it turns yellow. This colour change indicates that .....

1) Urine contains 2% glucose
2) Urine contains 0.5% glucose
3) Urine contains 1.5% glucose
4) Urine contains 1% glucose

(Space for Rough Work)

31. BT brinjal is an example of transgenic crops. In this, BT refers to .....

1) Bacillus tuberculosis
2) Biotechnology
3) Betacarotene
4) Bacillus thuringiensis

32. Which one of the following is NOT an antitranspirant?

1) PMA
2) BAP
3) Silicon oil
4) Low viscosity

33. The brainstem is made up of .....

1) Midbrain, pons, cerebellum
2) Midbrain, pons, medulla oblongata
3) Diencephalon, medulla oblongata, cerebellum
4) Cerebellum, cerebrum, medulla oblongata

34. The loosely arranged nonchlorophyllous parenchyma cells present in lenticels are called

1) Complementary cells
2) Passage cells
3) Water stomata
4) Albuminous cells

35. Column I contains terms and column II contains definitions. Match them correctly and choose the right answer.

	Column I		Column II
A	Parturition	p	Attachment of zygote to endometrium
B	Gestation	q	Release of egg from Graafian follicle
C	Ovulation	r	Delivery of baby from uterus
D	Implantation	s	Duration between pregnancy and birth
E	Conception	t	Formation of zygote by fusion of the egg and sperm
		u	Stoppage of ovulation and menstruation

1) A = q, B = s, C = p, D = t, E = r
2) A = s, B = r, C = p, D = t, E = q
3) A = t, B = p, C = q, D = r, E = s
4) A = r, B = s, C = q, D = p, E = t

(Space for Rough Work)

36. CAM pathway is observed in .....

1) Pineapple
2) Maize
3) Sunflower
4) Sugarcane

37. The number of ATP produced when a molecule of glucose undergoes fermentation is

1) 4
2) 36
3) 2
4) 38

38. Silk produced by Antheraea mylitta is also called .....

1) Muga silk
2) Tassar silk
3) Eri silk
4) Mysore silk

39. Which of the following hormones is a steroid?

1) Estrogen
2) Insulin
3) Glucagon
4) Thyroxine

40. More men suffer from colour blindness than women because .....

1) women are more resistant to disease than men
2) the male sex hormone testosterone causes the disease
3) the colour blind gene is carried on the 'Y' chromosome
4) men are hemizygous and one defective gene is enough to make them colour blind

(Space for Rough Work)

41. Which one of the following theories on the origin of life is mostly accepted?
    1) Special creation
    2) Steady state
    3) Panspermia
    4) Chemical origin

42. The rosette habit of cabbage can be changed by application of .....
    1) IAA
    2) GA
    3) ABA
    4) Ethaphon

43. Effective filtration pressure in glomerulus is caused due to .....
    1) powerful pumping action of the heart
    2) secretion of adrenalin
    3) Afferent arteriole is slightly larger than efferent arteriole
    4) Vacuum develops in proximal convoluted tubule and sucks the blood

44. Banana bunchytop virus is transmitted through .....
    1) Pentalonia nigronervosa
    2) Aedes aegypti
    3) Culex sp
    4) Agribacterium sp

45. In a tissue culture media, the resource of the phytohormone is .....
    1) Agar agar
    2) Glucose
    3) Micronutrients
    4) Coconut milk

(Space for Rough Work)

46. With reference to the pituitary, which of the following statements is true?

1) Neurohypophysis secretes vasopressin and oxytocin.
2) Neurohypophysis secretes TSH and STH.
3) Neurohypophysis collects and stores vasopressin and oxytocin.
4) Adenohypophysis secretes vasopressin and oxytocin.

47. Column I contains some terms and column II contains their meanings. Match them properly and choose the right answer.

	Column I		Column II
A	Glycogenesis	p	Conversion of glycogen to glucose
B	Glycosuria	q	Conversion of glucose to glycogen
C	Glyconeogenesis	r	Excretion of glucose in urine
D	Glycogenolysis	s	Conversion of noncarbohydrate sources to glucose
		t	Conversion of glucose to starch

1) A = p, B = q, C = r, D = s
2) A = q, B = r, C = s, D = p
3) A = q, B = p, C = r, D = s
4) A = p, B = t, C = q, D = s

48. The term, genetic RNA refers to .....

1) genetic material of RNA viruses
2) the RNA that carries genetic message
3) the RNA that helps gene regulation in lac-operon
4) the RNA present in mitochondria

49. As per the guidelines of the Indian Red Cross society, which of the following persons is recommended for blood donation?

1) People not in good health, under the influence of alcohol or drugs.
2) Ladies during menstruation, pregnancy and breast feeding.
3) Healthy women but unwed and below the age of 35.
4) Persons who are immunized with live vaccines.

50. In a typical heart, if EDV is 120 ml of blood and ESV is 50 ml of blood, the stroke volume (SV) is .....

1) 120 – 50 = 70 ml
2) 120 + 50 = 170 ml
3) 120 × 50 = 6000 ml
4) 120 ÷ 50 = 2.4 ml

(Space for Rough Work)

51. The term, 'southern blotting' refers to .....

1) transfer of DNA fragments from invitro cellulose membrane to electrophoresis gel
2) attachment of probes to DNA fragments
3) transfer of DNA fragments from electrophoresis gel to nitrocellulose sheet
4) comparison of DNA fragments from two sources

52. In some chordates, the notochord is modified as the vertebral column. Such animals are called vertebrates. Which of the following statements make sense?

1) All chordates are vertebrates but all vertebrates are not chordates.
2) All vertebrates are chordates and all chordates are vertebrates.
3) All vertebrates are chordates but all chordates are not vertebrates.
4) Chordates are not vertebrates and vertebrates are not chordates.

53. A clone is .....

1) a group of genetically similar organisms produced through asexual reproduction
2) a group of genetically similar organisms produced through sexual reproduction
3) a group of dissimilar organisms produced as a result of asexual reproduction
4) a group of genetically dissimilar organisms produced as a result of sexual reproduction

54. The space between the plasma membrane and the cell wall of a plasmolyzed cell surrounded by a hypertonic solution is occupied by the .....

1) hypotonic solution
2) isotonic solution
3) hypertonic solution
4) water

55. When the blood contains a high percentage of CO_2 and a very low percentage of O_2, the breathing stops and the person becomes unconcious. This condition is known as .....

1) suffocation
2) asphyxia
3) emphycema
4) eupnoea

(Space for Rough Work)

56. Which one of the following is not related to guttation?

1) Water is given out in the form of droplets.
2) Water given out is impure.
3) Water is given out during daytime.
4) Guttation is of universal occurrence.

57. The force responsible for upward conduction of water against gravity comes from .....

1) transpiration
2) photosynthesis
3) translocation
4) respiration

58. Column I contains names of the sphincter muscles of the alimentary canal and column II contains their locations. Match them properly and choose the correct answer.

	Column I		Column II
A	Sphincter of ani internus	p	opening of hepatopancreatic duct into duodenum
B	Cardiac sphincter	q	between duodenum and posterior stomach
C	Sphincter of oddi	r	guarding the terminal part of alimentary canal
D	Ileocaecal sphincter	s	between oesophagus and anterior stomach
E	Pyloric sphincter	t	between small intestine and bowel

1) A = r, B = q, C = s, D = p, E = t
2) A = q, B = t, C = p, D = s, E = r
3) A = r, B = s, C = p, D = t, E = q
4) A = s, B = r, C = p, D = q, E = t

59. Which one of the following reactions is an example of oxidative decarboxylation?

1) Conversion of succinate to fumerate.
2) Conversion of fumerate to malate.
3) Conversion of pyruvate to acetyl CoA.
4) Conversion of citrate to isocitrate.

60. Chemiosmosis hypothesis given by Peter Mitchel proposes the mechanism of .....

1) synthesis of NADH
2) synthesis of ATP
3) synthesis of $FADH_2$
4) synthesis of NADPH

(Space for Rough Work)