SEAL

SUBJECT : BIOLOGY	DAY – 1
SESSION : MORNING	TIME : 10.30 A.M. TO 11.50 A.M.

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	127857

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 also be shaded completely.
5. Compulsorily 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 paper seals present on all the 3 sides of this question booklet.
   - Do not look inside this question booklet.
   - Do not start answering on the OMR answer sheet.

SEAL

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 paper seals of this question booklet and check that this booklet does not have any unprinted or torn or missing pages or items etc., if so, get it replaced by a complete test booklet. Read each item 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 BALL POINT 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 answer sheet will also be recognised 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 the top sheet (Our 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.

[Turn Over

SEAL

1. Which of the following is **not** a character of cancerous tissues in our body ?

(1) Contact inhibition (2) Neoplasia

(3) Metastasis (4) Inability for differentiation

2. Which of the following statements is **not true** for *Nostoc* ?

(1) It is prokaryotic (2) It is autotrophic

(3) It is filamentous (4) It is macroscopic

3. The system of classification of plants proposed by these two botanists is claimed to be a natural system.

(1) Engler and Prantl (2) Bentham and Hooker

(3) Aristotle and Theophrastus (4) Darwin and Wallace

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

Column I (Name of pollination)	**Column II** (Type of pollination)
(a) Cleistogamy	(m) Insect pollination
(b) Geitonogamy	(n) Bud pollination
(c) Entomophily	(o) Pollination between flowers in the same plant
(d) Xenogamy	(p) Wind pollination
	(q) Cross pollination

(1) a – o; b – m; c – q; d – n (2) a – m; b – q; c – n; d – o

(3) a – n; b – o; c – m; d – q (4) a – q; b – p; c – o; d – n

Space For Rough Work

5. The host for *Cercospora personata* belongs to this family of angiosperms :

(1) Graminae (2) Leguminosae

(3) Malvaceae (4) Asclepiadaceae

6. The final stage in the tissue culture programme before the new plants are taken out for cultivation in the fields is known as :

(1) Micropropagation (2) Hardening

(3) Caulogenesis (4) Embryogenesis

7. An osmometer is filled with 0.5 M solution of NaCl in water. In which of the following solutions it must be immersed in order to make it shrink ?

(1) 0.5 M solution (2) 0.05 M solution

(3) Distilled water (4) 0.75 M solution

8. Perishable vegetables can be maintained fresh for a longer period by spraying on them with a solution of :

(1) ABA (2) Cytokinin

(3) Ethephon (4) Phenyl mercuric acetate

9. The prebiotic atmosphere of the earth was of a reducing nature. It was transformed into an oxidizing atmosphere of present day due to the emergence of :

(1) Cyanobacteria (2) Angiosperms

(3) Photosynthetic bacteria (4) Eukaryotic algae

Space For Rough Work

10. Match the contraceptive methods given under Column – I with their examples given under Column – II. Select the correct choice from those given below :

	Column – I (Contraceptive Method)		Column – II (Examples)
A.	Chemical	p.	Tubectomy and Vasectomy
B.	IUDs	q.	Copper T and Loop
C.	Barriers	r.	Condom and Cervical cap
D.	Sterilization	s.	Spermicidal Jelly and foam
		t.	Coitus interruptus and calendar method

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

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

11. One of the following movements in our body is not completely involuntary. Identify it.

(1) Deglutition (2) Peristalsis

(3) Systole of the ventricles (4) Dilation of pupil of the eye

12. This is **not** a GMO.

(1) Bt brinjal (2) Golden rice

(3) Tracy (4) Dolly

13. The site of Krebs cycle is

(1) Cytoplasm

(2) Mitochondrial matrix

(3) Intermembrane space of mitochondria

(4) Racker's particles

14. Which is the cutting organ in the mouth parts of cockroach ?

(1) Labium (2) Maxillary palp

(3) Mandible (4) Labrum

Space For Rough Work

15. If this enzyme were to be absent in our small intestine, digestion of proteins in our body would be severely affected.

(1) Pancreatic amylase (2) Maltase

(3) Lipase (4) Enterokinase

16. The frequency of heart beat in our body is maintained by :

(1) AV Node (2) SA Node

(3) Node of Ranvier (4) Chordae tendinae

17. Hypothalamus of the brain is **not** involved in this function :

(1) Sleep-wake cycle

(2) Osmoregulation & thirst

(3) Temperature control

(4) Accuracy of muscular movement

18. The Hardy-Weinburg principle **cannot** operate if

(1) the population is very large

(2) frequent mutations occur in the population

(3) the population has no chance of interaction with other populations

(4) free interbreeding occurs among all members of the population

19. The adult animal in this phylum is radially symmetrical; but its larva exhibits bilateral symmetry :

(1) Echinodermata (2) Coelenterata

(3) Arthropoda (4) Protozoa

20. Identify the sense codon from the following :

(1) UGA (2) AUG

(3) UAG (4) UAA

Space For Rough Work

21. Select a suitable name for this process :

$C_6H_{12}O_6 + 2ADP + 2Pi \longrightarrow 2C_2H_5OH + 2ATP + 2CO_2\uparrow$

(1) Alcoholic fermentation (2) Photorespiration

(3) Lactate fermentation (4) Aerobic respiration

22. The condition of erythroblastosis foetalis occurs **only when**

(1) the husband is Rh^+ and wife is Rh^-

(2) the husband is Rh^- and wife is Rh^+

(3) the mother is Rh^+ and the foetus is Rh^-

(4) the mother is Rh^- and the foetus is Rh^+

23. This is a nonbiodegradable pollutant :

(1) Sewage (2) Sulphur dioxide

(3) Oxides of nitrogen (4) Lead vapour

24. The time for optimum chances of conception in a woman is _____ starting from the day of menstruation.

(1) 1^{st} day (2) 4^{th} day

(3) 14^{th} day (4) 26^{th} day

25. The fourth cleavage plane during development of frog's egg is

(1) Double meridional (2) Single meridional

(3) Single latitudinal (4) Double latitudinal

Space For Rough Work

26. Which of the following parts of the vertebrate body arises from the mesoderm ?

(1) Spinal cord
(2) Bony skeleton
(3) Epidermis
(4) Lens of the eye

27. Point out the correct method of showing scientific name of coconut palm derived by binomial nomenclature :

(1) *Cocos nucifera*
(2) *Cocos Nucifera*
(3) *cocos Nucifera*
(4) *cocos nucifera*

28. Find out the **wrong** statement about angiosperm roots :

(1) Cuticle is absent in young stages.
(2) The apex is protected by root cap.
(3) Vascular bundles are collateral.
(4) Xylem is centripetal in growth in the young roots.

29. Given below is the floral diagram of a flower. Which of the following descriptions of the flower matches the floral diagram ?

(1) Heterochlamydeous, gamopetalous, pentamerous and bisexual
(2) Heterochlamydeous, gamopetalous, tetramerous and bisexual
(3) Homochlamydeous, polypetalous, pentamerous and bisexual
(4) Homochlamydeous, gamopetalous, tetramerous and unisexual

Space For Rough Work

30. An interconnecting membranous network of the cell composed of vesicles, flattened sacs and tubules is :

(1) Nucleus (2) Mitochondrion

(3) Endoplasmic reticulum (4) Lysosome

31. Read the statements given below and identify the **incorrect** statement.

(1) Scientific names are used all over the world.

(2) Scientific names are often descriptive and tell us some important character of an organism.

(3) Scientific names indicate relationship between species.

(4) Scientific names favour multiple naming for the same kind of an organism.

32. The Lac Operon is turned on when allolactose molecules bind to :

(1) Promoter site (2) Operator site

(3) mRNA (4) Repressor protein

33. Fearing that the child to be born may have a genetic disorder, a couple goes to a doctor. Which one of the following techniques is likely to be suggested by the doctor to cure the genetic disorder ?

(1) Hybridoma technology (2) Gene therapy

(3) r DNA technology (4) Embryo transfer

34. Select the group having only buffalo breeds of India from the following :

(1) Surti, Mehsana, Murrah, Nagapuri

(2) Mehsana, Murrah, Nagapuri, Haryana

(3) Murrah, Nagapuri, Haryana, Ongole

(4) Nagapuri, Haryana, Ongole, Sindhi

Space For Rough Work

35. With regard to the ABO blood typing system, if a man who has type B blood and a woman who has type O blood were to have children, what blood types could the children have ?

(1) A or O (2) B or O

(3) AB or O (4) A, B, AB or O

36. Secretin and Cholecystokinin are the hormones secreted in :

(1) Pyloric stomach (2) Duodenum

(3) Ileum (4) Oesophagus

37. Carbon dioxide is called a "greenhouse" gas, because

(1) it is involved in photosynthesis

(2) it emits light

(3) it traps Infrared radiations

(4) it traps Ultraviolet radiations

38. A fruit that develops from a single flower with a syncarpous pistil is :

(1) Simple fruit (2) Aggregate fruit

(3) Multiple fruit (4) Pseudocarp

39. The volume of blood that enters into the aorta with each ventricular systole is called :

(1) Cardiac cycle (2) Stroke volume

(3) Cardiac output (4) Vital capacity

Space For Rough Work

40. The chromosomal complement of individuals with Turner's syndrome is :

(1) 44A + XX (2) 44A + XY

(3) 44A + XO (4) 44A + XXY

41. Choose the mismatched pair from the following :

(1) Insulin – Gluconeogenesis

(2) Glucagon – Glycogenolysis

(3) Oxytocin – Contraction of uterine muscles

(4) Prolactin – Milk production in mammary glands

42. One of the following **is not a** wildlife conservation project :

(1) Project Dodo (2) Project Indian Bustard

(3) Project Tiger (4) Project Hangul

43. Visible expression of the genetic phenomenon of crossing over is called

(1) Recombination (2) Condensation

(3) Chiasmata (4) Spiralization

44. 3′AAA TGC GCG ATA 5′ is the sequence of nucleotides on a gene; after transcription the mRNA formed against it and the sequence of bases in the corresponding binding anticodon will be :

(1) 5′UUU ACG CGC UAU 3′ and 3′AAA–UGC–GCG–AUA5′

(2) 5′UAU CGC GCA UUU 3′ and 3′AUA–GCG–CGU–AAA5′

(3) 5′UUU ACC TUG UAU 3′ and 3′AAA–UGG–UAC–AUA5′

(4) 5′UAU GUT CCA UUU 3′ and 3′AUA–CAU–GGU–AAA5′

Space For Rough Work

45. Secondary cortex is also known as :

(1) Phellem (2) Phelloderm

(3) Phellogen (4) Bark

46. Pteridophytes are called vascular cryptogams, because they are non-seeded plants containing :

(1) Xylem and Phloem (2) Only Xylem

(3) Only Phloem (4) Neither Xylem nor Phloem

47. The enzymes which are absolutely necessary for recombinant DNA technology are :

(1) Restriction endonucleases and topoisomerases

(2) Endonucleases and polymerases

(3) Restriction endonucleases and Ligases

(4) Peptidases and Ligases

48. Stomata on the surface of the leaf open by :

(1) decreasing the solute concentration in the guard cells

(2) increasing the solute concentration in the guard cells

(3) weakening of the cell walls of the guard cells to allow them to stretch

(4) increasing the water potential in the guard cells

Space For Rough Work

49. Read the two statements A and B and identify the correct choice from those given :

Statement A : *Agrobacterium tumefaciens* is the causative agent of crown gall disease of dicots.

Statement B : *Agrobacterium tumefaciens* cause infection by entering the plant through wounds and injuries.

(1) Statement A is correct and B is wrong.

(2) Statement B is correct and A is wrong.

(3) Both statements A and B are correct.

(4) Both statements A and B are wrong.

50. Which of the following is the correct pathway of absorbed water in the roots of plants ?

(1) Soil water → root hair cell → cortical cells → pericycle → passage cells → xylem.

(2) Soil water → root hair cell → passage cells → cortical cells → xylem → pericycle.

(3) Soil water → root hair cell → pericycle → cortical cells → passage cells → xylem.

(4) Soil water → root hair cell → cortical cells → passage cells → pericycle → xylem.

51. Usually the whorl in a flower that attracts insects and protects the essential parts is :

(1) Calyx (2) Androecium

(3) Gynoecium (4) Corolla

52. Vein loading is the active transport of sugars from :

(1) Mesophyll cells to vessels

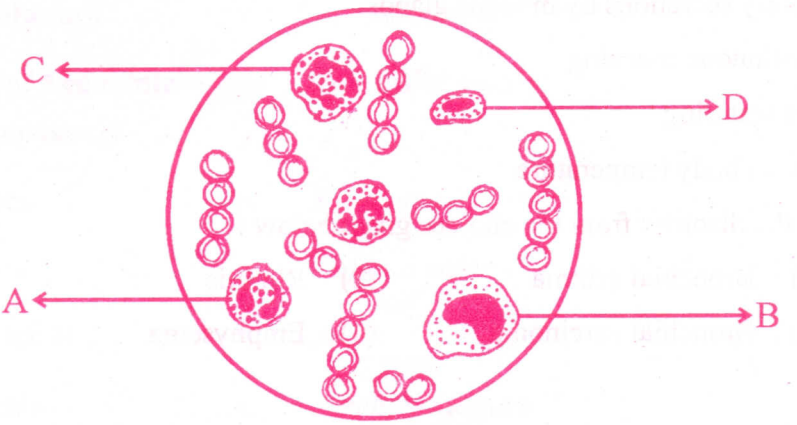
(2) Vessels to mesophyll cells

(3) Mesophyll cells to sieve tubes

(4) Sieve tubes to mesophyll cells

Space For Rough Work

53. Study the diagram given below and identify the cells labelled as A, B, C and D, and choose the correct option.



(1) A = Eosinophil, B = Erythrocyte, C = Neutrophil and D = Basophil

(2) A = Eosinophil, B = Lymphocyte, C = Neutrophil and D = Monocyte

(3) A = Erythrocyte, B = Basophil, C = Neutrophil and D = Lymphocyte

(4) A = Eosinophil, B = Monocyte, C = Neutrophil and D = Lymphocyte

54. The sexually transmitted disease, that can affect both the male and the female genitals and may damage the eyes of babies born of infected mothers is

(1) AIDS (2) Syphilis

(3) Gonorrhoea (4) Hepatitis

55. Chemiosmotic theory of ATP synthesis in the mitochondrion is based on

(1) Ca^+ gradient (2) K^+ gradient

(3) H^+ gradient (4) Na^+ gradient

Space For Rough Work

56. Following are few characters of a disorder in human body :

(a) inflammation of the mucous membrane of nasal passage

(b) watery secretions by mucous glands

(c) continuous sneezing

(d) eye watering

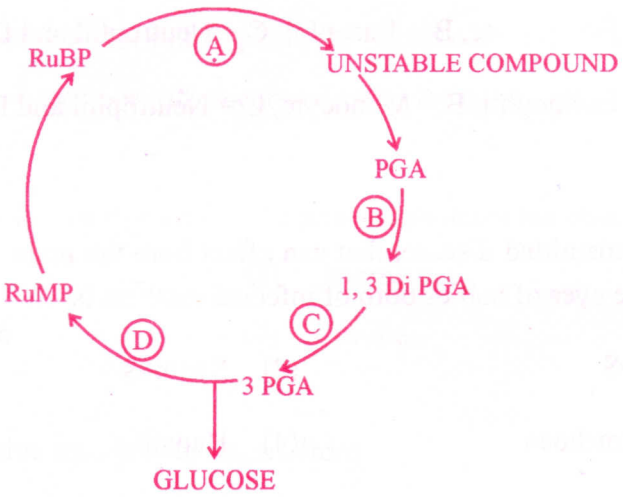
(e) rise in body temperature

Identify the disorder from the choices given below :

(1) Bronchial asthma (2) Rhinitis

(3) Bronchial carcinoma (4) Emphysema

57. In a condensed schematic representation of Dark reaction of photosynthesis given below, steps are indicated by alphabets. Select the option where the alphabets are correctly identified.



(1) A = CO_2 fixation, B = Reduction, C = Phosphorylation, D = Regeneration.

(2) A = Regeneration, B = CO_2 fixation, C = Reduction, D = Phosphorylation.

(3) A = CO_2 fixation, B = Phosphorylation, C = Reduction, D = Regeneration.

(4) A = CO_2 fixation, B = Phosphorylation, C = Regeneration, D = Reduction.

Space For Rough Work

58. Match the plants of economic importance given under Column I with their scientific names given under Column II and choose the correct option.

Column I (Plants of Economic importance)		Column II (Scientific names)
A. Spices	p.	*Syzigium aromaticum*
B. Pulses	q.	*Cajanus cajan*
C. Medicinal	r.	*Adathoda vasica*
D. Cereals	s.	*Sorghum vulgare*
	t.	*Thea chinensis*

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

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

59. If father shows normal genotype and mother shows a carrier trait for haemophilia :

(1) All the female offspring will be normal.

(2) All the female offspring will be carriers.

(3) A male offspring has 50% chances of active disease.

(4) Female offspring has probability of 50% to have active disease.

60. According to Best and Taylor's Theory, which of the following does not play any role in blood clotting ?

(1) Prothrombin (2) Fibrinogen

(3) Platelets (4) Calcium ions

Space For Rough Work

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A-1

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