

BI8

Test Booklet Series

0

← Question Booklet Number

***Do not open this test booklet until you are asked to do so.***

Number of Pages in Booklet  
**16**

No. of Questions in Booklet  
**100**

Maximum Marks  
**100**

Time **2** Hours

**INSTRUCTIONS**

*Please read the instructions given below carefully and follow them.*

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES **NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. Please note that it is the candidate's responsibility to encode and darken the **ROLL NUMBER, TEST BOOKLET SERIES** Code A, B, C or D and Question Booklet Number carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet. **Any omission/discrepancy will render the OMR Answer Sheet liable for rejection.**
3. You have to enter your Roll Number on the Test Booklet in the Box provided below. **DO NOT** write **anything else** on the Test Booklet.

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4. This Test Booklet contains 100 items (questions). Each item shall have five options (A, B, C, D, and E). If a candidate is attempting a question, he has to darken most appropriate circle from A, B, C or D. However if you are not attempting a question then you have to darken the circle 'E'. If none of the five circle is darkened, one-fourth (0.25) marks shall be deducted.
5. **Any candidate not darkening any of the five circles in more than 10% question shall be disqualified.**
6. **All questions are compulsory. Each question carry one mark. For each wrong Answer, one fourth (0.25) mark shall be deducted.**
7. You have to mark all your responses **ONLY** on the separate OMR Answer Sheet provided. See directions in the OMR Answer Sheet. Use only **BLUE/BLACK Ball Point Pen** to answer in OMR Answer Sheet.
8. Before you proceed to mark in the OMR Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the OMR Answer Sheet as per instructions mentioned on the OMR Answer Sheet.
9. At the end of the examination you should handover to the invigilator the original copy and office copy of the OMR Sheet. You are permitted to take away with you the Question Booklet along with candidate's copy of the OMR Sheet.
10. Sheets for rough work are appended in the Test Booklet at the end.

- 1 Absence of the sense of taste on one side of tongue is known as :  
(A) Hemianosima (B) Hemicephalia  
(C) Hemigeusia (D) Hemihyperhidrosis  
(E) Question not attempted
- 2 Assertion (A) : Sea squirt is placed in Subphylum Urochordata.  
Reason (R) : Notochord is present only in the tail of sea squirt larva.  
(A) A is true but R is false.  
(B) A is false but R is true.  
(C) Both A and R are true but R is not the correct explanation of A.  
(D) Both A and R are true and R is the correct explanation of A.  
(E) Question not attempted
- 3 Bacterial cells getting embedded in a sheath of mucilage to prevent their desiccation are called :  
(A) Zoogloea (B) Endospore  
(C) Forespore (D) Arthospore  
(E) Question not attempted
- 4 The process of killing pupa without changing the cocoon shell layer is called :  
(A) Denier (B) Dupion  
(C) Hatching (D) Stifling  
(E) Question not attempted
- 5 The original specimen used as nomenclatural type is :  
(A) Syntype (B) Paratype  
(C) Topotype (D) Holotype  
(E) Question not attempted
- 6 Incomplete dwarf bundles in *Mirabilis jalapa* contain only :  
(A) Bundle sheath (B) Sieve tubes  
(C) Xylem (D) Phloem  
(E) Question not attempted
- 7 Which genus of Psilophytopsida is living?  
(A) *Psilotum* (B) *Rhynia*  
(C) *Homeophyton* (D) *Cooksonia*  
(E) Question not attempted
- 8 Which of the following is NOT a natural predator of BPH (Brown Plant Hopper)?  
(A) Bugs (B) Red ants  
(C) Spiders (D) All of the above  
(E) Question not attempted
- 9 Which of the following Kinesin microtubule dependent motor protein are minus directed?  
(A) Kinesin- 4 (B) Kinesin- 5  
(C) Kinesin- 10 (D) Kinesin- 14  
(E) Question not attempted
- 10 Which of the following is a Coelenterate?  
(A) Sea fan (B) Sea lemon  
(C) Sea hare (D) Sea star  
(E) Question not attempted

- 11 Which of the following has Deuterostomic tube plan?  
(A) Round worm (B) Mollusca  
(C) Arthropod (D) Echinoderms  
(E) Question not attempted
- 12 Which one of the following is zygomorphic flower?  
(A) Pea (B) Acacia  
(C) Sunflower (D) Ocimum  
(E) Question not attempted
- 13 A carbohydrate which is used to solidify bacterial culture media :  
(A) Cellulose (B) Agar  
(C) Xylose (D) Erythrose  
(E) Question not attempted
- 14 How many amino acids form one turn of alpha helix of a protein?  
(A) 5 (B) 3  
(C) 4.2 (D) 3.6  
(E) Question not attempted
- 15 Out of the following enzymes, which one is fastest?  
(A) Catalase (B) Lactase  
(C) Carbonic anhydrase (D) Lipase  
(E) Question not attempted
- 16 When a person is suffering from poor renal reabsorption then which of the following will NOT help in the maintenance of blood volume?  
(A) Decreased glomerular filtration (B) Increased ADH secretion  
(C) Decreased arterial pressure in kidney (D) Increased arterial pressure in kidney  
(E) Question not attempted
- 17 A person is taking a drug that causes, among other things, dryness of the mouth and speeding of the heart rate but no impairment of the ability to use the skeletal muscles. What type of receptor does this drug probably block?  
(A) Cholinergic muscarinic receptors (B) Cholinergic nicotinic receptors  
(C) Dopaminergic receptors (D) Glutamate receptors  
(E) Question not attempted
- 18 Energy for photophosphorylation comes from :  
(A) Electron gradient (B) Proton gradient  
(C) Redox potential (D) NADPH  
(E) Question not attempted
- 19 SNARE complexes are important for guiding synaptic transmission and  $\text{Ca}^{2+}$  binding is essential for activation of neurotransmitter release from the pre synaptic terminal. In view of the above, identify the components of the SNARE complex that are activated in a sequential manner in order to facilitate neurotransmitter uptake, docking and release.  
(A) Syntaxin – Synaptotagmin – Sinaptobrevin  
(B) Synaptotagmin – Sinaptobrevin – SNAP-25  
(C) Sinaptobrevin – Syntaxin – SNAP-25  
(D) SNAP-25 – Synaptotagmin– Syntaxin  
(E) Question not attempted

- 20 Fluoride injury is related with :  
 (A) Carnation (B) Gerbera  
 (C) Chrysanthemum (D) Gladiolus  
 (E) Question not attempted
- 21 A photosynthesising plant is releasing  $^{18}\text{O}$  more than the normal. The plant must have been supplied with :  
 (A)  $\text{O}_3$  (B)  $\text{H}_2\text{O}$  with  $^{18}\text{O}$   
 (C)  $\text{CO}_2$  with  $^{18}\text{O}$  (D)  $\text{C}_6\text{H}_{12}\text{O}_6$  with  $^{18}\text{O}$   
 (E) Question not attempted
- 22 This biomolecule on the cell membranes that helps in cell recognition :  
 (A) Carbohydrate tag of Glycolipids (B) Carbohydrate tag of Glycoproteins  
 (C) Protein tag of lipoproteins (D) Protein tag of Glycoproteins  
 (E) Question not attempted
- 23 Hormones produced by placenta in humans are :  
 (A) Human chorionic gonadotropin (hCG), human placental lactogen (hPL), estrogens, progesterones etc.  
 (B) Human chorionic gonadotropin (hCG), prolactin, estrogens, progesterones etc.  
 (C) Human chorionic gonadotropin (hCG), human placental lactogen (hPL), testosterone, progesterones etc.  
 (D) Human chorionic gonadotropin (hCG), human placental lactogen (hPL), estrogens, Follicle stimulating hormone etc.  
 (E) Question not attempted
- 24 Which of the following is a wrongly matched pair?  
 (A) Alcohol – Nitrogenase (B) Detergents – Lipase  
 (C) Textile – Amylase (D) Fruit juice – Pectinase  
 (E) Question not attempted
- 25 A pollen grain from tetraploid plant fuses with egg of a diploid plant, the resulting seed will have :  
 (A)  $2n$  endosperm and  $2n$  embryo (B)  $4n$  endosperm and  $3n$  embryo  
 (C)  $6n$  endosperm and  $3n$  embryo (D)  $3n$  endosperm and  $2n$  embryo  
 (E) Question not attempted
- 26 In which pair both the plants can be vegetatively propagated by leaf species?  
 (A) *Bryophyllum* and *Kalanchoe* (B) *Chrysanthemum* and *Agave*  
 (C) *Agave* and *Kalanchoe* (D) *Asparagus* and *Bryophyllum*  
 (E) Question not attempted
- 27 Mammary glands are modified :  
 (A) Endocrine glands (B) Sweat glands  
 (C) Oil glands (D) Mucous glands  
 (E) Question not attempted
- 28 In medically assisted reproduction which of the following techniques transfers embryo at more advanced stage?  
 (A) GIFT (B) ZIFT  
 (C) TET (D) PROST  
 (E) Question not attempted

- 29 The signals for parturition originate from :  
 (A) Oxytocin released from maternal pituitary  
 (B) Fully developed foetus only  
 (C) Placenta only  
 (D) Placenta as well as fully developed foetus  
 (E) Question not attempted
- 30 Identify the correct statement on 'inhibin'.  
 (A) Inhibits the secretion of LH, FSH and Prolactin  
 (B) Is produced by granulosa cells in ovary and inhibits the secretion of FSH  
 (C) Is produced by granulosa cells in ovary and inhibits the secretion of LH  
 (D) Is produced by nurse cells in testis and inhibits the secretion of LH  
 (E) Question not attempted
- 31 If the menstrual cycle is of 35 days, then what is the risk period (cycle starts on 1<sup>st</sup> day) :  
 (A) 9<sup>th</sup> to 17<sup>th</sup> days (B) 11<sup>th</sup> to 18<sup>th</sup> days  
 (C) 16<sup>th</sup> to 24<sup>th</sup> days (D) 18<sup>th</sup> to 35<sup>th</sup> days  
 (E) Question not attempted
- 32 Cat cry syndrome is caused due to :  
 (A) Loss of segment of 9<sup>th</sup> chromosome  
 (B) Loss of small segment of 5<sup>th</sup> chromosome  
 (C) Deletion of fragment of 22<sup>nd</sup> chromosome  
 (D) Loss of fragment of 21<sup>st</sup> chromosome  
 (E) Question not attempted
- 33 The genetic formula of a double monosomic is written as :  
 (A)  $2n-1$  (B)  $2n-2$   
 (C)  $2n-1-1$  (D)  $2n+2$   
 (E) Question not attempted
- 34 The genetic relatedness (r) of an individual to his nephew is 0.25. The alleles that cause uncles to care of nephews will spread according to Hamilton's Rule, only if the fitness benefit is :  
 (A) Equal to the cost of care (B) More than the cost of care by 25%  
 (C) Double the cost of care (D) Four times the cost of care  
 (E) Question not attempted
- 35 The frequencies of two alleles p and q for a gene locus in a population at Hardy-Weinberg equilibrium are 0.3 and 0.7, respectively. After a few generations of inbreeding, the heterozygote frequency was found to be 0.28. the inbreeding coefficient in this case is :  
 (A) 0.42 (B) 0.28  
 (C) 0.33 (D) 0.673  
 (E) Question not attempted
- 36  $\alpha$ -amanitin is a fungal toxin which inhibits eukaryotic RNA polymerases. The three eukaryotic RNA polymerases show differential sensitivity to this toxin. Which one of the following order (higher to lower) is correct in respect of sensitivity towards  $\alpha$ -amanitin?  
 (A) RNA Pol III > RNA Pol II > RNA Pol I  
 (B) RNA Pol II > RNA Pol III > RNA Pol I  
 (C) RNA Pol I > RNA Pol III > RNA Pol II  
 (D) RNA Pol II > RNA Pol I > RNA Pol III  
 (E) Question not attempted

- 37 Transfer of foreign DNA into cultured host cells mediated through chemicals is called :  
 (A) Transformation (B) Transduction  
 (C) Transfection (D) Transition  
 (E) Question not attempted
- 38 Use of living microorganisms to degrade environmental pollutants is called :  
 (A) Biomagnification (B) Biodegradation  
 (C) Bioremediation (D) Biofiltration  
 (E) Question not attempted
- 39 Skin transplant was done from sister to brother, after few years brother to sister, skin transplant was done but rejection occurred, the phenomena is called as :  
 (A) Schwartzman Reaction (B) Theobald Smith Phenomena  
 (C) Eichwald Silmsner effect (D) Schultz Dale phenomena  
 (E) Question not attempted
- 40 Which of the following is the causative organism of trichomycosis axillaris?  
 (A) *Mycobacterium canis* (B) *Corynebacterium tenuis*  
 (C) *Trichophytonrubrum* (D) *Candida*  
 (E) Question not attempted
- 41 The following are precursors of endometrial carcinoma except :  
 (A) Atrophic endometrium (B) Atypical adenomatous hyperplasia  
 (C) Adenocarcinoma in situ (D) Cystic hyperplasia  
 (E) Question not attempted
- 42 Biofortification is the process of improving nutritional quality of food crops by various methods except :  
 (A) Genetic engineering (B) Genome editing  
 (C) Conventional breeding (D) Adding inorganic fertilizers  
 (E) Question not attempted
- 43 The Environment (Protection) Act was enacted in the year :  
 (A) 1972 (B) 1957  
 (C) 1984 (D) 1986  
 (E) Question not attempted
- 44 Which one is NOT an autoimmune disorder?  
 (A) Lupus (B) Rheumatoid arthritis  
 (C) Alopecia areata (D) Influenza  
 (E) Question not attempted
- 45 The tetanus vaccine given to human in case of deep cut is :  
 (A) DNA vaccine (B) Recombinant vector vaccine  
 (C) Subunit vaccine (D) Toxoid vaccine  
 (E) Question not attempted
- 46 The permanent cure of gene therapy can be :  
 (A) Genes isolated from bone marrow were introduced into the cells at early embryonic stage  
 (B) Cells isolated from thymus in an adult were cultured and transformed with corrected gene  
 (C) Cells isolated from bone marrow in an embryo were cultured and transformed with corrected gene  
 (D) Cells isolated from bone marrow in an adult were cultured and transformed with corrected gene  
 (E) Question not attempted



- 47 GEAC stands for :  
(A) Genetic Ethical Active Commission  
(B) Genetic Engineering Approval Committee  
(C) Genetic Ethical Approval Committee  
(D) Genetic Engineering Active Commission  
(E) Question not attempted
- 48 \_\_\_\_\_ is when the blood-forming cells you received on transplant day start to grow and make healthy blood cells.  
(A) Myogenesis (B) Homeostasis  
(C) Engraftment (D) Carcinogenesis  
(E) Question not attempted
- 49 The process when the chemicals do NOT allow other organisms to grow in a particular area :  
(A) Desiccation (B) Sulphurification  
(C) Reclamation (D) Antibiosis  
(E) Question not attempted
- 50 The diversity among species within one community is :  
(A) Alpha - diversity (B) Beta - diversity  
(C) Gamma - diversity (D) Delta - diversity  
(E) Question not attempted
- 51 March 22 is celebrated as :  
(A) World Water Day (B) World Conservation Day  
(C) World Nature Day (D) World Population Day  
(E) Question not attempted
- 52 Which of the following is NOT a feature of 'r' selected species?  
(A) A Reproduce quickly  
(B) The low survival rate of progenies  
(C) Reproduce a large number of progenies  
(D) Paternal care  
(E) Question not attempted
- 53 The population size of a bird increased from 600 to 645 in one year. If the per capita birth rate of this population is 0.125. What is the per capita death rate?  
(A) 0.25 (B) 0.15  
(C) 0.05 (D) 0.02  
(E) Question not attempted
- 54 Which of the following is considered as the 'Forest of Global Heritage'?  
(A) Nandan Kanan (B) Sundarbans in West Bengal  
(C) Kaziranga in Assam (D) Indian Botanical Gardens, Shibpur  
(E) Question not attempted

- 55 The Galapagos finches were an important clue to Darwin's thinking about the origin of species. These finches are believed to have descended from a single ancestral species that colonized the Galapagos archipelago, America, over a short period of time. The Galapagos finches differ in their beak shape and size. Different species feed on seeds that vary in size and hardness. Which of the following is the most likely explanation for these patterns?
- (A) The finches represent an example of directional trend in beak size from small to big  
 (B) Beak shapes changed in response to different seed types and these changes were inherited by subsequent generations  
 (C) The ancestral finch already had all the beak variations and different lineages formed that were specialized to eat different seed types  
 (D) The finches represent an example of adaptive radiation in which beak variation was generated by mutation followed by selection by different seed types.  
 (E) Question not attempted
- 56 Animals with wide range of tolerance for salinity are called :
- (A) Stenohaline (B) Euryhaline  
 (C) Stenohaline (D) Perihaline  
 (E) Question not attempted
- 57 Which one of the following is an example of ex-situ conservation?
- (A) National park (B) Wildlife sanctuary  
 (C) Seed bank (D) Sacred groves  
 (E) Question not attempted
- 58 Medical Termination of Pregnancy are relatively considered safe during :
- (A) 12<sup>th</sup> week of pregnancy (B) 10<sup>th</sup> week of pregnancy  
 (C) 13<sup>th</sup> week of pregnancy (D) 4<sup>th</sup> week of pregnancy  
 (E) Question not attempted
- 59 What happens during muscle contraction?
- (A) Size of 'A' bands decreases (B) Size of 'H' zone becomes larger  
 (C) Size of 'I' band decreases (D) Diameter of fiber remain same  
 (E) Question not attempted
- 60 Which nation is most affected by deforestation?
- (A) Honduras (B) Indonesia  
 (C) Benin (D) Ghana  
 (E) Question not attempted
- 61 The part of the brain where the centre for hunger and thirst is located :
- (A) Cerebrum (B) Hypothalamus  
 (C) Cerebellum (D) Medulla oblongata  
 (E) Question not attempted
- 62 Which one of the following is NOT the basic component of culture medium used for plant tissue culture ?
- (A) Complex mixture of salts (B) Amino acids  
 (C) Serum albumin (D) Sugar/sucrose  
 (E) Question not attempted



- 63 Enzyme linked immuno-sorbent assay is done for detection of :  
 (A) AIDS (B) Typhoid  
 (C) Cancer (D) Malaria  
 (E) Question not attempted
- 64 Chlorosis is a :  
 (A) Production of fewer leaves in plants.  
 (B) Production of large number of leaves in plants.  
 (C) Yellowing of leaves in plants due to low chlorophyll contents.  
 (D) Yellowing of leaves in plants due to more chlorophyll contents.  
 (E) Question not attempted
- 65 Separation of molecules in gel- filtration chromatography depends upon :  
 (A) Receptor ligand binding  
 (B) Molecular weight and pore size  
 (C) Synthetic ion-exchange resins  
 (D) Polysaccharide glycoprotein lactic interaction  
 (E) Question not attempted
- 66 Correct sequence of stages in 1<sup>st</sup> prophase of meiosis is :  
 (A) Leptotene – Pachytene – Zygotene – Diakinesis – Diplotene  
 (B) Leptotene – Zygotene – Pachytene – Diplotene – Diakinesis  
 (C) Pachytene – Zygotene – Leptotene – Diplotene – Diakinesis  
 (D) Zygotene – Pachytene – Leptotene – Diakinesis – Diplotene  
 (E) Question not attempted
- 67 Pellagra is caused due to prolonged deficiency of :  
 (A) Folic Acid (B) Niacin  
 (C) Thiamine (D) Tocopherol  
 (E) Question not attempted
- 68 DNA replication occurs at one of these phases of cell cycle :  
 (A) S (B) G1  
 (C) G2 (D) M  
 (E) Question not attempted
- 69 Match the following.
- |  |                 |
|--|-----------------|
| a. Stimulate the production of digestive enzymes | i. Auxins       |
| b. Induces seed dormancy                         | ii. Ethylene    |
| c. Causes apical dominance                       | iii. ABA        |
| d. Causes ripening of fruits                     | iv. Gibberelins |
- (A) a-iv, b-iii, c-i, d-ii (B) a-iv, b-i, c-ii, d-iii  
 (C) a-i, b-iv, c-ii, d-iii (D) a-iii, b-iv, c-i, d-ii  
 (E) Question not attempted
- 70 The process by which water enters the seed is :  
 (A) Osmosis (B) Plasmolysis  
 (C) Imbibition (D) Diffusion  
 (E) Question not attempted

- 71 If the X/A ratio is 0.5 in drosophila, what will be the sex of this fly?  
 (A) Super male (B) Normal male  
 (C) Intersex (D) Super female  
 (E) Question not attempted
- 72 Amount of air which one can exhale from the lungs with maximum effort after inhalation with maximum effort :  
 (A) Tidal volume (B) Total lung capacity  
 (C) Inspiratory capacity (D) Vital capacity  
 (E) Question not attempted
- 73 When a skeletal muscle contracts, there is :  
 (A) shortening of sarcomere (B) shortening of thick myofilaments  
 (C) decrease in the width of A band (D) increase in the distance between Z lines  
 (E) Question not attempted
- 74 Which one of the following is NOT a function of lymph?  
 (A) Carrier for nutrient (B) Exhibiting immune response  
 (C) Transport of oxygen (D) Absorption of fat  
 (E) Question not attempted
- 75 In C3 and C4 plants, primary carboxylation takes place with the help of :  
 (A) PEP carboxylase and pyruvate carboxylase.  
 (B) RuBP carboxylase and PEP carboxylase.  
 (C) PEP carboxylase and RuBP carboxylase.  
 (D) RuBP carboxylase and pyruvate carboxylase.  
 (E) Question not attempted
- 76 When a diploid female plant is crossed with a tetraploid male, the ploidy of endosperm cells is :  
 (A) Pentaploidy (B) Tetraploidy  
 (C) Diploidy (D) Triploidy  
 (E) Question not attempted
- 77 Seminal plasma in humans is rich in :  
 (A) Fructose and certain enzymes but poor in calcium.  
 (B) Fructose, calcium and certain enzymes.  
 (C) Fructose and calcium but has no enzymes.  
 (D) Glucose and certain enzymes but has no calcium.  
 (E) Question not attempted
- 78 A female's gland corresponding to prostate of males is :  
 (A) Bartholin's gland (B) Bulbourethral gland  
 (C) Clitoris (D) Paraurethral gland of Skene  
 (E) Question not attempted
- 79 The cap binding protein (eIF4E), which is involved in the global regulation of translation, is highly regulated in eukaryotic cells. In an experiment, a researcher transfected mammalian cells with (eIF4E) gene for its overexpression. Due to this, the cells will undergo :  
 (A) Apoptosis (B) Neoplastic transformation  
 (C) No change (D) Differentiation  
 (E) Question not attempted

- 80 RNA interference (RNAi) inhibits :
- (A) Neither transcription nor translation of specific genes
  - (B) Translation of specific mRNAs
  - (C) DNA replication
  - (D) Transcription of all genes
  - (E) Question not attempted
- 81 Hari is  $2\frac{1}{2}$  times as good as a workman as Kishan. Therefore, he can finish a given job in 42 days less than Kishan can. By working together, in how many days can Hari and Kishan finish the job?
- (A) 28 days
  - (B) 24 days
  - (C) 20 days
  - (D) 16 days
  - (E) Question not attempted
- 82 If  $1 + 5 + 9 + 13 + \dots + x = 496$ , find the value of 'x'.
- (A) 57
  - (B) 59
  - (C) 61
  - (D) 63
  - (E) Question not attempted
- 83 A man is draining out petrol from a large drum into a storage tank measuring  $72 \text{ cm} \times 40 \text{ cm} \times 50 \text{ cm}$ . The storage tank already has 18 L of petrol in it. When petrol is filled up to  $\frac{3}{8}$ th height of the storage tank,  $\frac{5}{9}$ th part of the drum was still filled with petrol. How much petrol was there in the drum in the beginning?
- (A) 75 L
  - (B) 78 L
  - (C) 81 L
  - (D) 84 L
  - (E) Question not attempted
- 84 Three years ago, a man's age was twice the square of his son's age. In seven years from now, his age will be three times his son's age. Find their present ages.
- (A) Man's age = 28 yrs, son's age = 4 yrs
  - (B) Man's age = 30 yrs, son's age = 5 yrs
  - (C) Man's age = 32 yrs, son's age = 6 yrs
  - (D) Man's age = 35 yrs, son's age = 7 yrs
  - (E) Question not attempted
- 85 Ajay and Amit move from points A to B, 33 km apart, in a straight path at speeds of 5 kmph and 6 kmph, respectively. Amit reaches point B, turns back immediately and as he is walking back to point A, meets Ajay at point C. Find the distance from A to C.
- (A) 22 km
  - (B) 25 km
  - (C) 28 km
  - (D) 30 km
  - (E) Question not attempted

**Qs. 86-87 :** Each of these questions contains six statements followed by four sets of combinations of three. Choose the set in which the statements are logically related.

- 86**
- Sham won a lottery.
  - Sham lost in a chess game.
  - Sham is not intelligent.
  - One need not be intelligent to win a lottery.
  - One need not be intelligent to win a chess game.
  - Sham plays chess.
- (A) bef (B) acd  
(C) bde (D) bdf  
(E) Question not attempted

- 87**
- Some college athletes are professionals.
  - No college athlete is a professional.
  - Some professionals are well paid.
  - All professionals are well paid.
  - All well paid persons are professionals.
  - No well paid person is a college athlete.
- (A) bef (B) abf  
(C) bdf (D) acf  
(E) Question not attempted

**Qs. 88-90 :** Each of these has a question followed by two statements I and II. Mark the answer as:

- if the question can be answered with the help of statement I alone,
- if the question can be answered with the help of statement II alone,
- if both the statements I and II are needed to answer the question, and
- if the question cannot be answered even with the help of both the statements.
- Question not attempted

- 88** Mr. X takes the morning train to his office from Station A to go to Station B, and his colleague Mr. Y joins him on the way. There are three stations C, D and E on the way not necessarily in that sequence. What is the sequence of these stations during the journey?

- Mr. Y boards the train at D.
- Mr. Z, who travels between C and D, has two segments of journey in common with Mr. X, but no segment of journey common with Mr. Y.

- 89** How many people (from the group surveyed) read both newspapers 'Indian Express' and 'Times of India'?

- Out of the total 200 readers surveyed, 100 read Indian Express, 120 read Times of India and 50 read The Hindu.
- Out of the total of 200 readers surveyed, 100 read Indian Express, 120 read Times of India and 50 read neither.

- 90** What are the ages of the three brothers?

- The product of their ages is 21.
- The sum of their ages is not divisible by 3.

- 91 Kanaud is the old name of which of the following city in Haryana?  
(A) Karnal (B) Kaithal  
(C) Narnaul (D) Mahendergarh  
(E) Question not attempted
- 92 According to Skanda Purana, how many fire pits (Agni - Kunds) were created by Brahma for performance of yagna at Kapal-Mochan (Bilaspur)?  
(A) 1 (B) 2  
(C) 3 (D) 4  
(E) Question not attempted
- 93 Consider the following statements about Adi Badri.  
I. It is situated to the north of Bilaspur on the foothills of the Shivaliks.  
II. The Saraswati river is believed to have originated from this place.  
III. Sculpture of Shiva-Parvati and Ganesha belonging to 9<sup>th</sup> and 10<sup>th</sup> century have been discovered from this place.  
Which of the above statements is / are correct?  
(A) I and II only (B) II and III only  
(C) I and III only (D) I, II and III  
(E) Question not attempted
- 94 Consider the following words used in ancient scriptures.  
I. Dharmashetra  
II. Nardak  
III. Brahmavarta  
IV. Brahmakshetra  
Which of the above words have been used for Kurukshetra?  
(A) I, II and III only (B) I, III and IV only  
(C) II, III and IV only (D) I, II, III and IV  
(E) Question not attempted
- 95 Consider the following statements about Chor Gumbad at Narnaul.  
I. It is called signboard of Narnaul.  
II. It was built by Fateh Khan an Afgan as his tomb.  
III. It is also known as Bhul-Bhullainay.  
Which of the above statements is / are correct?  
(A) I and II only (B) II and III only  
(C) I and III only (D) I, II and III  
(E) Question not attempted

**Qs 96-100 :** Answer the questions based on the contents of the passage given below:

Five years ago, The Economist declared that data and not oil, is the world's most valuable resource. A slew of analyses, interpretations and projections followed. This month, the former deputy prime minister of the United Kingdom, made headlines with his statement that data isn't finite and limited like oil, rather, it is like air, which can't be contained. Many industrialists now hail data as the raw material. Data forms the bedrock on which today's knowledge pyramid rises towards awareness, understanding and finally, wisdom, which is essential for nuanced and effective policymaking. The World Development Report 2021 asserts that there is a need for forging a new social contract for data which accelerates data use and reuse to realise greater value, creates equitable access to benefits, integrates national data systems, and finally fosters trust such that people are protected from the harms of data misuse. We must construct new rules for this data age, and the road ahead signals some critical but surmountable challenges. For instance, less than 20% of low - and middle-income countries have modern data infrastructures such as colocation data centres and direct access to cloud computing facilities. In India, public data remains inaccessible because many government officers don't want to put data out in the public domain. Data is also siloed across sectors. As we enter India's "techade", data must be accessible to all citizens. We must adopt a multisectoral approach to collecting, integrating, and interpreting data. This will strengthen service delivery by governments at all levels. Data should be presented in a simplified and decluttered manner to maximise the benefits. When it comes to data governance, India offers a range of best practices which can be emulated and advanced by other nations. The Data Governance Quality Index (DGQI) enables government agencies to undertake a detailed self-assessment of their data-preparedness levels. It helps ministries advance towards an optimal data-driven outcome tracking, and data governance architecture. Even as terabytes of data flow through the government's data pipeline involving collection, cleaning, processing, analysis, modelling and visualisation, the pipeline is constrained with structural plaque. This plaque comes from databases being inaccessible and siloed, and data platforms being cluttered with complexity without any flexibility to innovate.

- 96** Which of the following statements are not borne out by the contents of the passage?
- Nowadays it costs more money for governments to acquire certain kinds of data from other countries as compared to the cost of oil.
  - Clearly data is a costlier resource to produce than is oil.
  - Wisdom for governments is in acquiring data purely as a raw material at lower costs and convert the same into proper information to be utilised equitably for public good.
- (A) i and ii  
(B) i and iii  
(C) ii and iii  
(D) i, ii and iii  
(E) Question not attempted



- 97 In the context of the passage which of the following statements could be taken as the most accurate assessment of the author's opinion about data?
- (A) It forms the base of the pyramid on top of which could be placed the knowledge or wisdom that is an asset to policymakers.
- (B) The value of data depends on how well it is shared between countries for wider social good.
- (C) Data offers best value when it is developed separately for different sectors as per their individual needs.
- (D) Data creation and management must be done equitably across all the countries.
- (E) Question not attempted
- 98 As per the passage, handling of data by the government encompasses all the following aspects except:
- i. Ensuring its repeated use by a wide cross-section of stakeholders to extract the maximum benefit out of it.
- ii. Using it as a tool to negotiate better oil deals with the supplier countries.
- iii. Laying down norms complying with DGQI Standards for the different stakeholders to utilise the data provided by it in a controlled way, as only that would prevent data plaque formation.
- (A) i and ii (B) ii and iii  
(C) i and iii (D) i, ii and iii  
(E) Question not attempted
- 99 Which of the following options is synonymous with the word "plaque" in the context of the passage?
- (A) Failure (B) Corrupting  
(C) Rusting (D) Clogging  
(E) Question not attempted
- 100 Which of the following options is closest in meaning to the word "siloes" as it is used in the passage?
- (A) Lost (B) Protected  
(C) Banned for use (D) Complicated  
(E) Question not attempted

SPACE FOR ROUGH WORK

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**Final Answer Key of the Master Question Booklet of the Screening Test held on 10.09.2023 for  
the Posts of Post Graduate Teachers (PGTs) in the subject of Biology for Mewat Cadre  
(Advt No. 33/2023)**

Q. No.	Ans Key	Q. No.	Ans Key	Q. No.	Ans Key	Q. No.	Ans Key
1	C	26	A	51	A	76	B
2	D	27	B	52	D	77	B
3	A	28	C	53	C	78	D
4	D	29	D	54	B	79	B
5	D	30	D	55	D	80	B
6	D	31	C	56	B	81	C
7	A	32	B	57	C	82	C
8	B	33	C	58	X	83	C
9	D	34	D	59	C	84	D
10	A	35	C	60	A	85	D
11	D	36	B	61	B	86	B
12	A	37	X	62	C	87	A
13	B	38	C	63	A	88	C
14	D	39	C	64	C	89	B
15	C	40	B	65	B	90	D
16	D	41	A	66	B	91	D
17	A	42	D	67	B	92	C
18	B	43	D	68	A	93	D
19	B	44	D	69	A	94	D
20	D	45	D	70	C	95	C
21	B	46	X	71	B	96	D
22	B	47	B	72	D	97	B
23	A	48	C	73	A	98	B
24	A	49	D	74	X	99	D
25	B	50	A	75	B	100	B

Dy. Secretary  
HPSC