

परीक्षेचे नांव : सहायक प्राध्यापक, वनस्पतीशास्त्र, जीवशास्त्र, सूक्ष्मजीवशास्त्र, महाराष्ट्र शिक्षण सेवा  
(महाविद्यालयीन शाखा), गट-अ

परीक्षेचा दिनांक : ९ फेब्रुवारी, २०१४

महाराष्ट्र लोकसेवा आयोगामार्फत “सहायक प्राध्यापक, वनस्पतीशास्त्र, जीवशास्त्र, सूक्ष्मजीवशास्त्र, महाराष्ट्र शिक्षण सेवा, (महाविद्यालयीन शाखा), गट-अ” या परीक्षेच्या प्रश्नपत्रिकेची उत्तरतालिका उमेदवारांच्या माहितीसाठी संकेतस्थळावर प्रसिध्द करण्यात आली आहे. सदर उत्तरतालिकेतील प्रश्न-उत्तरासंबंधी उमेदवारांना निवेदन करावयाचे असल्यास त्यांनी अधिप्रमाणीत स्पष्टीकरण / संदर्भ देऊन तसेच विषय, परीक्षेचे नाव, प्रश्नसंच, प्रश्नक्रमांक यांच्या उल्लेखासह आपले लेखी निवेदन उपसचिव (गोपनीय), महाराष्ट्र लोकसेवा आयोग, बँक ऑफ इंडिया बिल्डींग, ३ रा मजला, हुतात्मा चौक, मुंबई ४०० ००१ या पत्त्यावर टपालाने पाठवावे. यासंदर्भात दिनांक २१ फेब्रुवारी, २०१४ पर्यन्त आयोगाकडे प्राप्त झालेल्या निवेदनांचीच दखल घेतली जाईल. तदनंतर आलेली निवेदने विचारात घेतली जाणार नाहीत, याची कृपया नोंद घ्यावी.

# MPSC

Notations:

1. Options shown in green color are correct.
2. Options shown in red color are incorrect.

## Group A

Number of optional sections to be attempted: 0, Group Maximum duration : 0, Group Minimum duration : 60,  
Revisit allowed for view? : No, Revisit allowed for edit? : No, Break time: 0

### Assistant Professor Botany Biology Microbiology

Section type : Online, Number of Questions to be attempted:100, Mandatory or Optional: Mandatory

Subsection : 1, Question Shuffling Allowed : Yes

**Question id : 1601 Question Type : MCQ**

The longest stage of mitosis is

**Options :**

1. prophase
2. metaphase
3. anaphase
4. telophase

**Question id : 1602 Question Type : MCQ**

Recently discovered gymnosperm is

**Options :**

1. Pinus longaeva
2. Taxus brevifolia
3. Wollemia nobilis
4. Ginkgo biloba

**Question id : 1603 Question Type : MCQ**

Bacterium that fixes CO<sub>2</sub> via Calvin-Benson cycle is

**Options :**

1. *Macromonas* spp.
2. *Beggiatoa* spp.
3. *Leptothrix* spp.
4. *Thiobacillus* spp.

**Question id : 1604    Question Type : MCQ**

The nuclear body is bounded by two membranes in

**Options :**

1. *Pirellula marina*
2. *Borrelia burgdorferi*
3. *Gemmata obscuriglobus*
4. *Aquaspirillum magnetotacticum*

**Question id : 1605    Question Type : MCQ**

Phytosiderophores are highly specific ligands that bind with

**Options :**

1. Sodium
2. Iron
3. Potassium
4. Calcium

**Question id : 1606    Question Type : MCQ**

Suitable chemical for protoplast fusion is

**Options :**

1.  $\text{NaNO}_3$
2.  $\text{Na}_2\text{CO}_3$
3.  $\text{KNO}_3$
4.  $\text{H}_2\text{SO}_4$

**Question id : 1607    Question Type : MCQ**

A powerful inhibitor of stomatal opening is

**Options :**

1. Auxin
2. Cytokinin
3. Gibberelin
4. ABA

**Question id : 1608    Question Type : MCQ**

Principal commercial source of rubber is

**Options :**

1. *Parthenium argentatum*
2. *Hevea brasiliensis*
3. *Quillaja saponaria*
4. *Glycyrrhiza glabra*

**Question id : 1609    Question Type : MCQ**

One of the examples of a quillwort is

**Options :**

1. *Selaginella apoda*
2. *Equisetum arvense*
3. *Isoetes gunnii*
4. *Psilotum nudum*

**Question id : 1610    Question Type : MCQ**

A bryophyte having resistant phenolic compounds embedded in their cell wall is

**Options :**

1. *Sphagnum*
2. *Marchantia*
3. *Polytrichum*
4. *Anthoceros*

**Question id : 1611    Question Type : MCQ**

Closest living relative of land plants is

**Options :**

1. *Caulerpa*
2. *Ulva*
3. *Volvox*
4. *Chara*

**Question id : 1612    Question Type : MCQ**

Digitalin, used for heart medication, is obtained from

**Options :**

1. *Belladonna plant*
2. *Foxglove*
3. *Eucalyptus tree*
4. *Cinchona tree*

**Question id : 1613    Question Type : MCQ**

Genes for cytosolic glutamine synthetase are expressed in

**Options :**

1. cortex
2. mesophyll
3. phloem
4. xylem

**Question id : 1614    Question Type : MCQ**

Light activation of chloroplast enzymes occurs through

**Options :**

1. ferredoxine-thioredoxin reductase
2. thioredoxin
3. protein disulfide isomerase
4. chloroplast transcriptase

**Question id : 1615    Question Type : MCQ**

Bacterial genes responsible for the synthesis of extracellular polysaccharides during symbiosis are

**Options :**

1. bacA and noc
2. ndv and lps
3. fixI and fixJ
4. nol and nod

**Question id : 1616    Question Type : MCQ**

Enzymatic activity of APS reductase is associated with its

**Options :**

1. C-terminal domain
2. N-terminal domain
3. glutaredoxine motif
4. thioredoxin motif

**Question id : 1617    Question Type : MCQ**

Restoration of fertility in male maize plant requires the expression of two genes. If only one gene (RF1) is expressed then fertility is

**Options :**

1. not restored and URF 13 level increased
2. restored and URF 13 decreased
3. partially restored and URF 13 remain same
4. not restored and URF 13 level reduced

**Question id : 1618    Question Type : MCQ**

S-proteins which mediate self incompatibility in Solanum spp. are

**Options :**

1. DNases
2. S-degradosomes
3. S-flavoproteins
4. RNases

**Question id : 1619 Question Type : MCQ**

The protein that provides resistance to a pathogen in plants possess

**Options :**

1. zinc finger repeat motif
2. leucine zipper repeat motif
3. leucine rich repeat motif
4. helix loop helix repeat motif

**Question id : 1620 Question Type : MCQ**

FadR protein of E. coli acts as

**Options :**

1. an activator in the presence of long chain fatty acid
2. an activator in the absence of acetyl co A
3. a repressor in the absence of acetyl co A
4. a repressor in the presence of short chain fatty acid

**Question id : 1621 Question Type : MCQ**

Protein responsible for bending of DNA during transcription of certain gene is

**Options :**

1. H-NS
2. IHF
3. Xis
4. NusA

**Question id : 1622 Question Type : MCQ**

The developmental expression of genes through histone modification is controlled by

**Options :**

1. histone deacetylase
2. histone acetyl transferase
3. polycomb group protein
4. SBF transcription factor

**Question id : 1623 Question Type : MCQ**

Replication licensing factors that bind to origin recognition complex in yeast are

**Options :**

1. Cdc45, ctd1
2. Cdc28, ctd1
3. Cdc6, cdt1
4. Cdc24, ctd1

**Question id : 1624 Question Type : MCQ**

Poly pyrimidine tract binding proteins which constitute a major part of group II spliciosome assembly are

**Options :**

1. U2AF, PTB and PSF
2. U1, U2 and U6
3. SRp20, SRp35 and SRp42
4. hnRNP, SnRNP and non-SnRNP

**Question id : 1625 Question Type : MCQ**

Small RNA molecule derived from genomic DNA tandem repeat is

**Options :**

1. piRNA
2. miRNA
3. snRNA
4. gRNA

**Question id : 1626 Question Type : MCQ**

In unusual fatty acids of plants the unsaturation begins after

**Options :**

1. C-9 and progresses in the direction of methyl carbon
2. any carbon and progresses in the direction of methyl carbon
3. C-9 and progresses in any direction
4. any carbon and progresses in any direction

**Question id : 1627 Question Type : MCQ**

A cell maintains nascent peptide chains in non aggregated folding state with the help of

**Options :**

1. Hsp70
2. GroEL-TRiC
3. GroES
4. Hsp40

**Question id : 1628 Question Type : MCQ**

Enzyme that bypasses glycolytic reactions in the absence of adenine nucleotide in plants is

**Options :**

1. Glycerinaldehyde 3 phosphate kinase
2. Phosphoenol pyruvate phosphatase
3. 3 Phosphoglycerate dehydrogenase
4. Phosphofructokinase

**Question id : 1629 Question Type : MCQ**

The direct precursor of gibberelic acid biosynthesis is

**Options :**

1. copalyl diphosphate
2. geranyl diphosphate
3. ent-kaurene
4. farnesyl diphosphate

**Question id : 1630 Question Type : MCQ**

$\alpha$ -solanine inhibits the activity of

**Options :**

1. cholinesterase
2. cytochrome P450 monooxygenase
3. trypsin
4. chymotrypsin

**Question id : 1631 Question Type : MCQ**

Plant flavonoid responsible for pink colour is

**Options :**

1. pelargonidin
2. delphinidin
3. cyanidin
4. rubidine

**Question id : 1632 Question Type : MCQ**

Bacterial membrane contains sterol-like molecules, such as

**Options :**

1. chloesterol
2. stigmasterol
3. manitetrol
4. hopanoids

**Question id : 1633 Question Type : MCQ**



The bacteriophages MS<sub>2</sub> and QB contain

**Options :**

1. minus strand RNA genome
2. plus strand RNA genome
3. single stranded DNA genome
4. double stranded DNA genome

**Question id : 1634 Question Type : MCQ**

Destruction of the sheath covering skeletal muscles is caused by

**Options :**

1. Clostridium tetani
2. Streptococcus
3. Chlamydia trachomatis
4. Vibrio cholerae

**Question id : 1635 Question Type : MCQ**

Leukoencephalomalacia in horse is caused by

**Options :**

1. Aspergillus niger
2. Cryptococcus neoformans
3. Candida rugosa
4. Fusarium moniliforme

**Question id : 1636 Question Type : MCQ**

Haemophilus influenzae takes up DNA from closely related species because it has

**Options :**

1. a specific protein factor
2. a receptor protein
3. 11 base pairs repeated DNA sequence
4. 19 base pairs repeated DNA sequence

**Question id : 1637 Question Type : MCQ**

In the Archaea, B-responsive element (BRE) is present

**Options :**

1. before transcription start site
2. before transcription termination site
3. after translation start site
4. after translation termination site

**Question id : 1638 Question Type : MCQ**

The commonly used yeast for chocolate fermentation is

**Options :**

1. *Aspergillus* spp.
2. *Saccharomyces* spp.
3. *Neurospora* spp.
4. *Kluyveromyces* spp.

**Question id : 1639 Question Type : MCQ**

Diplospory found in

**Options :**

1. *Triticum*
2. *Tradescantia*
3. *Tripsacum*
4. *Trifolium*

**Question id : 1640 Question Type : MCQ**

International centre for agriculture research in dry areas maintains the germplasm of

**Options :**

1. *Barley*
2. *Pearl millets*
3. *Soybean*
4. *Potato*

**Question id : 1641 Question Type : MCQ**

Presence of the free margins, conduplicate carpel and fused in the basal region is the characteristic feature of

**Options :**

1. *Elmerillia tsiampacca*
2. *Drimys piperita*
3. *Magnolia grandiflora*
4. *Aromadendron elegans*

**Question id : 1642 Question Type : MCQ**

The proteins encoded by McrB and McrC genes recognize the DNA sequence for cleavage is

**Options :**

1. 5'-A-mC-N<sub>40-80</sub>-A-mC-3'
2. 5'-T-mC-N<sub>40-80</sub>-T-mC-3'
3. 5'-U-mC-N<sub>40-80</sub>-U-mC-3'
4. 5'-C-mC-N<sub>40-80</sub>-C-mC-3'

**Question id : 1643 Question Type : MCQ**

Monosomic wheat (*Triticum aestivum*) is produced by

**Options :**

1. pollinating trisomic wheat with normal diploid wheat
2. pollinating nullisomic wheat with normal diploid wheat
3. pollinating haploid wheat with normal diploid wheat
4. pollinating amphiploid wheat with normal diploid wheat

**Question id : 1644 Question Type : MCQ**

Which one of the following is an example of RFLP linked mapping of gene using Near Isogenic Lines

**Options :**

1. Gene for resistance against nematode in potato
2. Two genes (Rx1, Rx2) for resistance against potato virus
3. Genes for resistance against nematode in sugarcane
4. Gene Sm for *Stemphylium* resistance

**Question id : 1645 Question Type : MCQ**

In Mediterranean climate, vegetation is

**Options :**

1. evergreen and deciduous trees and shrubs
2. deciduous forest and grasslands
3. evergreen and have wide circumpolar range
4. deciduous forests only

**Question id : 1646 Question Type : MCQ**

Cones do not open to release their seeds until they have been burned in

**Options :**

1. *Calocedrus* spp.
2. *Araucaria* spp.
3. *Thuja* spp.
4. *Pinus* spp.

**Question id : 1647 Question Type : MCQ**

Psilophyton-like plant of the Trimerophytina was evolved in

**Options :**

1. upper Devonian
2. upper Cretaceous
3. mid Devonian
4. mid Cretaceous

**Question id : 1648 Question Type : MCQ**

The three-pored angiosperm pollen characteristics of all but the most primitive dicots had appeared

**Options :**

1. ~80 million year ago
2. ~120 million year ago
3. ~160 million year ago
4. ~200 million year ago

**Question id : 1649 Question Type : MCQ**

Avenacin A-1 found in the root of oat plant is highly effective against

**Options :**

1. *Psylliodes chrysocephala*
2. *Xanthomonas citri*
3. *Gaeumannomyces graminis*
4. *Pseudomonas syringae*

**Question id : 1650 Question Type : MCQ**

Most potent synthetic chemical to induced systemic acquired resistance in plants is

**Options :**

1. 2, 4-dichlorophenoxy acetic acid
2. 2, 6-dichloroisonicotinic acid
3. 2, 6-dichlorobenzopyrol
4. 2, 4-dihydroxyphenoxy acetic acid

**Question id : 1651 Question Type : MCQ**

An intermediate compound of the cytoplasmic pathway of isoprenoid biosynthesis is

**Options :**

1. acetoacetyl-CoA
2. mevalonic acid 5 phosphate
3. 2-C-Methyl-D-erythritol-4-phosphate
4. 1 Deoxy-D-ribulose 5 phosphate

**Question id : 1652 Question Type : MCQ**

Spider silk, a structural protein, contains

**Options :**

1. alpha helix
2. alpha helical secondary structure
3. beta pleated sheath
4. both alpha helix and beta sheath

**Question id : 1653 Question Type : MCQ**

RNA stability in prokaryotes is enhanced due to the presence of

**Options :**

1. repetitive extragenic palindromes
2. repetitive intragenic palindromes
3. a DEAD box proteins
4. a DEAD box RNA helicase

**Question id : 1654 Question Type : MCQ**

The protein involved in recombination in several archaeons

**Options :**

1. RecA
2. Rad51
3. DmcA
4. RadA

**Question id : 1655 Question Type : MCQ**

The protein that helps in lambda Phage DNA excision from bacterial chromosome is

**Options :**

1. XerCD protein
2. Xis protein
3. Cre recombinase
4. Hin Invertase

**Question id : 1656 Question Type : MCQ**

Genes responsible for determination of sex in bryophytes are

**Options :**

1. FEM1 and TRA
2. Sdc-1 and Sdc-2
3. ORF162 and M2D3.5
4. Hers and TRA

**Question id : 1657 Question Type : MCQ**

Activation of DnaB in DNA replication of  $\lambda$  phage is assisted by

**Options :**

1.  $\lambda p$  and  $\lambda c$
2. DnaK and DnaJ
3. DnaA and DnaC
4.  $\lambda o$  and repA

**Question id : 1658 Question Type : MCQ**

In CsrABC system of E. coli, CsrA regulates the

**Options :**

1. repression of glucose synthesis and activation of glycogen and glycolysis
2. repression of glycogen synthesis and activation of glucose and glycolysis
3. activation of glucose and glycogen synthesis and repression of glycolysis
4. activation of glycolysis and repression of glucose and glycogen synthesis

**Question id : 1659 Question Type : MCQ**

Riboswitch controls translation through

**Options :**

1. translation inhibition mechanism
2. attenuation mechanism
3. both translation inhibition and attenuation mechanisms
4. degradation of newly formed transcripts

**Question id : 1660 Question Type : MCQ**

Among the first genes to be up-regulated in response to cytokinin is

**Options :**

1. AHK-2
2. CHASE
3. AHK-3
4. ARR

**Question id : 1661 Question Type : MCQ**

Some types of variation are due to changes in the genetic material. What is this type of change called?

**Options :**

1. Fertilisation
2. Mutation
3. Radiation
4. Sterilisation

**Question id : 1662 Question Type : MCQ**

Which protein has been produced generating a transgenic sheep that is used for replacement therapy for individuals at risk from emphysema?

**Options :**

1. Plasminogen activator (tPA)
2.  $\alpha$ -anti trypsin (AAT)
3. Casein
4. Amyloid precursor proteins

**Question id : 1663 Question Type : MCQ**

DNA into fish is injected into

**Options :**

1. Pronuclei
2. Cytoplasm
3. both pronuclei & cytoplasm
4. neither pronuclei nor cytoplasm

**Question id : 1664 Question Type : MCQ**

Transgenic goats have been used to produce which of the following protein that is used for dissolving blood clots?

**Options :**

1. Amyloid precursor protein
2.  $\alpha$ 1-anti trypsin (AAT)
3. Casein
4. A variant of human tissue-type plasminogen activator

**Question id : 1665 Question Type : MCQ**

Superovulation is primarily the result of

**Options :**

1. decreased atresia in medium and large follicles ( $>1.7$  mm)
2. increased atresia in medium and large follicles ( $>1.7$  mm)
3. increased atresia in the large follicles ( $<1.7$  mm)
4. increased atresia in the large follicles ( $>1.7$  mm)

**Question id : 1666 Question Type : MCQ**

Animal pharming can be defined as

**Options :**

1. growing animals for farming
2. programming animals to produce novel products
3. generating transgenic animals for farming
4. growing animals for domestic use

**Question id : 1667 Question Type : MCQ**

When a fertilized egg cell develops into an embryo, the entropy of the living system

**Options :**

1. Decreases
2. Increases
3. remains constant

4. First increases then decreases

**Question id : 1668 Question Type : MCQ**

Fusion of karyoplast with the enucleated cell is achieved in presence of

**Options :**

1. cytochalasin B
2. polyethylene glycol
3. both Cytochalasin B & Polyethylene glycol
4. alcohol

**Question id : 1669 Question Type : MCQ**

Bar eye character of Drosophila is due to

**Options :**

1. duplication in region of 16A of X chromosome
2. deletion in region of 16A of X chromosome
3. due to presence of additional X-chromosome
4. due to a point mutation in eye-locus

**Question id : 1670 Question Type : MCQ**

Transmission of a gene from male parent to female child to male grand child is known as

**Options :**

1. holandric inheritance
2. quantitative inheritance
3. criss-cross inheritance
4. maternal inheritance

**Question id : 1671 Question Type : MCQ**

Which one of the following defects do you expect to see if you were able to specifically block apoptosis in the developing limb bud of a frog embryo?

**Options :**

1. The digits will remain connected through a web-like extension
2. The bones will not form, and the limb would look like a paddle
3. The limb would look normal but would be larger in size
4. The anterior-posterior polarity of the limb will be lost.

**Question id : 1672 Question Type : MCQ**

Which one of the following is not a characteristic of phylum mollusca ?

**Options :**

1. True body cavity
2. Metamerism



3. Organ system level of organisation

4. Bilaterally symmetrical

**Question id : 1673 Question Type : MCQ**

After invitro fertilization :

**Options :**

1. Embryo with more than 8 cells are implanted in uterus.

2. Embryo with more than 16 cells are not implanted in uterus.

3. Embryo with 8-16 cells can be implanted in uterus.

4. Embryo with cells more than 16 is implanted in uterus.

**Question id : 1674 Question Type : MCQ**

Which of the following disorder is mainly determined by alteration in the single gene?

**Options :**

1. Chromosomal disorder

2. Mendelian disorder

3. Down's syndrome

4. Turner syndrome

**Question id : 1675 Question Type : MCQ**

Which of the following statement is not correct

**Options :**

1. During DNA-replication, deoxyribonucleotide triphosphate serve dual purposes

2. DNA-dependent -DNA polymerase catalyse the polymerisation only in one direction i.e. 5'-3'

3. A failure in cell division after DNA replication results into polyploidy

4. In DNA of E.coli only  $4.6 \times 10^6$  bp are present

**Question id : 1676 Question Type : MCQ**

Mosquito injects into the blood of the next host through mosquito bites

**Options :**

1. sporozoites

2. merozoites

3. gametophyte

4. zygote

**Question id : 1677 Question Type : MCQ**

In hemoglobin efficiency for oxygen increases then there is

**Options :**

1. Low  $pO_2$

2. High  $pCO_2$

3. Low pCO<sub>2</sub>

4. High pO<sub>2</sub>

**Question id : 1678 Question Type : MCQ**

Aldosterone is involved in

**Options :**

1. Electrolyte balance

2. Carbohydrate metabolism

3. Growth and development

4. Fat metabolism

**Question id : 1679 Question Type : MCQ**

Insulin resistance females generally have problem in ovulation because

**Options :**

1. The elevated androgens cause an increase in free estrogens which results in a decrease in follicle stimulating hormone (FSH)

2. Ovary become non-functional

3. Amount of free estrogen decreases

4. The androgens are decreased thus follicle stimulating hormone (FSH) is increased.

**Question id : 1680 Question Type : MCQ**

Pearl Oysters are obtained from the genus

**Options :**

1. Oysteria

2. Mytilus

3. Pila

4. Pinctada

**Question id : 1681 Question Type : MCQ**

Anaemia due to lack of hemoglobin is associated with

**Options :**

1. Vitamin B6

2. calcium deficiency

3. vitamin B12

4. Iron deficiency

**Question id : 1682 Question Type : MCQ**

Fat soluble vitamins involved in bone formation and blood clotting are

**Options :**

1. Vit D and Vit K

2. Vit B and Vit K
3. Vit A and Vit K
4. Vit C and Vit K

**Question id : 1683    Question Type : MCQ**  
Concentration of urine in mammals depends on

**Options :**

1. length of Glomerulus
2. Length of Henle's loop
3. Osmotic pressure of blood
4. Size of organism

**Question id : 1684    Question Type : MCQ**  
Uricotelism is an adaptation for

**Options :**

1. Conserving water
2. Conserving salt
3. Marine Habitats
4. High altitude

**Question id : 1685    Question Type : MCQ**  
Hypertrophy in anterior pituitary in adult lead to

**Options :**

1. Gigatism
2. dwarfinism
3. acromegaly
4. cretinism

**Question id : 1686    Question Type : MCQ**  
Major weight of human body is due to

**Options :**

1. Carbon
2. oxygen
3. phosphorus
4. nitrogen

**Question id : 1687    Question Type : MCQ**  
Which of the following is not correctly matched

**Options :**

1. Porifera-Chanocytes

2. Arthropods- Malphigian tubules

3. Annelids- Citellum

4. Molluscs-Cnidocytes

**Question id : 1688 Question Type : MCQ**

Which phylum is characterized by absence of body symmetry, no tissue, organ and lack of nervous system?

**Options :**

1. Porifera

2. Cnidaria

3. Pteniphora

4. Rhyzophora

**Question id : 1689 Question Type : MCQ**

The specialized structure pectin for clear eye sight is characteristic feature of

**Options :**

1. Birds

2. Amphibian

3. Aquatic mammals

4. Nocturnal mammals

**Question id : 1690 Question Type : MCQ**

In brain meninges are absent at

**Options :**

1. Dura matter

2. Grey matter

3. Pia matter

4. Archnoid matter

**Question id : 1691 Question Type : MCQ**

Vector for transmission of disease Kalazar is

**Options :**

1. Anophelus

2. Glossina

3. Ades

4. Phlebotomus

**Question id : 1692 Question Type : MCQ**

Consider the following events in history of life?

A) prokaryotic cell

- B) eukaryotic cell
- C) natural selection
- D) organic macromolecules
- E) formation of replicating molecule

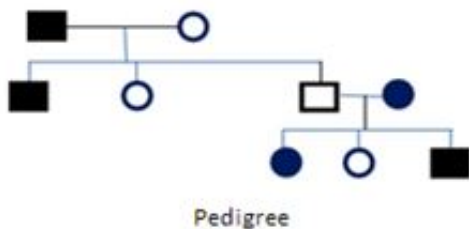
Which of the following is the correct sequence?

**Options :**

1. D -> E -> A -> C -> B
2. D -> E -> A -> B -> C
3. D -> E -> C -> A -> B
4. E -> C -> A -> B -> D

**Question id : 1693    Question Type : MCQ**

Consider the following pedigree chart



Pedigree The pedigree chart above can be used to investigate different modes of inheritance such as

- A: autosomal dominant
- B: autosomal recessive
- C: X-linked dominant
- D: X-linked recessive

Which of the following modes can be represented by pedigree chart above?

**Options :**

1. A
2. C
3. A and D
4. B and C

**Question id : 1694    Question Type : MCQ**

A woman patient suffering from thyrotoxicosis shows high level of thyroxine in the blood which is attributed to failure in feed back inhibition in hypothalamic-pituitary-thyroxine circuit. If we further check blood in detail, patient will also show high level of

- A: TSH
- B: thyroid stimulating IgM
- C: TRH
- D: parathyroid hormone

Which of the following combination of above statements is correct?

**Options :**

1. A and B
2. B and C
3. A and C
4. B and D

**Question id : 1695    Question Type : MCQ**

A person suffering from night blindness moves to doctor. Doctor initially advised patient to consume more of fish oil but one month later seeing no improvement Doctor give him injection of Vitamin A. Still there was no improvement in visibility. The probable reason for failure of both treatments may be lack of any of the enzyme given below

- A: retinol dehydrogenase
- B: retinal synthase
- C: retinal isomerase
- D: retinal reductase

Which is the correct reason for night blindness in above case?

**Options :**

1. D only
2. C and D
3. A only
4. B and C both

**Question id : 1696 Question Type : MCQ**

The following represents some steps in Krebs cycle

Isocitrate- $\rightarrow$  $\alpha$ -KGA- $\rightarrow$  Succinyl CoA- $\rightarrow$  Succinate- $\rightarrow$ Fumarate

Which of the following is correct for each step?

**Options :**

1. NAD- $\rightarrow$ NADH, NAD- $\rightarrow$ NADH, ADP- $\rightarrow$ ATP, FAD- $\rightarrow$ FADH<sub>2</sub>
2. NAD- $\rightarrow$ NADH, FAD- $\rightarrow$ FADH<sub>2</sub>, GDP- $\rightarrow$ GTP, FAD- $\rightarrow$ FADH<sub>2</sub>
3. NAD- $\rightarrow$ NADH, NAD- $\rightarrow$ NADH, GDP- $\rightarrow$ GTP, FAD- $\rightarrow$ FADH<sub>2</sub>
4. NAD- $\rightarrow$ NADH, FAD- $\rightarrow$ NADH<sub>2</sub>, ADP- $\rightarrow$ ATP, NAD- $\rightarrow$ NADH

**Question id : 1697 Question Type : MCQ**

The following are characteristics of a threatened animal

- 1: population declined 90%
- 2: population below 50 individuals
- 3: Extent of area occupancy below 100 Sq Km
- 4: probability of extinction in wild at least 50% in upcoming 10 years

As per IUCN red data book, the organism would be kept in category of

**Options :**

1. Endangered
2. Vulnerable
3. Extinct in wild
4. Critically endangered

**Question id : 1698 Question Type : MCQ**

Which of the following is false for Ascaris:

**Options :**

1. belongs to genus nematode.
2. known as the "Small intestinal roundworms".
3. Its example includes *A. lumbricoides*
4. can infect salivary glands.

**Question id : 1699 Question Type : MCQ**

The parasite plasmodium damages red blood cells using which enzymes

**Options :**

1. plasmepsin
2. chymotrypsin
3. histidine acid phosphatase
4. trypsin.

**Question id : 1700    Question Type : MCQ**

The vector for *P. falciparum* is

**Options :**

1. *Anopheles gambiae*
2. *Anopheles latens*
3. *Anopheles maculatus*
4. *Anopheles maculipennis*