

**MADHYAMIK SAMPLE QUESTION PAPER**  
**2016**

**Time: 3:15 Hr.**

**Life Science(X)**

**F.M.:90**

**Group 'A'**

[Candidates will have to answer question Nos. 1,2,3 and 4]

**1. Complete the sentences choosing the correct answer (any five):**

**1x5=5**

(i) Where is Sclera located in human body?

(a) Tongue      (b) Skin

(c) Eye          (d) Ear

(ii) From which gland thyroxin hormone is secreted?

(a) Thyroid      (b) Testes

(c) Adrenal      (d) Pituitary

(iii) In which stage of mitosis does nuclear membrane disappear?

a) Metaphase, b) Prophase,

c) Telophase, d) Anaphase.

(iv) In which animal reproduction takes place without fertilization?

a) Toad          b) Honey bee

c) Pigeon        d) Pea plant.

(v) Who proposed the term “Survival of the fittest”?

a) Mendel,      b) Lamarck,

c) Darwin,     d) Weissmann.

(vi) Which part of the Cactus plant is modified into spines?

a) Stem          b) Leaves

c) Root          d) Flower.

(vii) Which microbe causes cholera?

a) Bacteria,     b) Virus,

c) Protozoa,    d) Fungi.

**2. Answer any ten questions in a complete sentence:      1x10=10**

(i) Which alkaloid is used in the treatment of eye?

(ii) Where is urea synthesized in human body?

(iii) Suddenly, If you came in contact with a hotter body what type of reflex action will your nervous system perform?

(iv) Which hormone helps in urine formation?

(v) If a hybrid tall pea plant is hybridized with a pure dwarf pea plant then what will be the percentage of hybrid tall plants in F1 generation?

(vi) What kind of reproduction is binary fission in amoeba?

(vii) Give an example of vegetative reproduction in plants?

(viii) In which food product bought from the sweets-shop is ‘Lactobacillus’ found?

(ix) Name an animal which perform both sexual and asexual reproduction.

(x) Give an example of homologous organ.

(xi) Name the nitrogen base which is found only in RNA but not in DNA.

(xii) Name a useful virus.

(xiii) Which fungi causes 'Black rust' disease in wheat?

**3. Answer any six questions:- 2x6=12**

(i) Where is vestibular body situated? What is its function?

(ii) What will happen if cytokinesis does not occur in animal cell division?

(iii) What do you understand by "survival of the fittest"?

(iv) How many types of chromosomes are there in human somatic cell? How many of each type of chromosomes are present in each cell?

(v) Mention one adaptive feature of each root and stem of cactus plant.

(vi) What is "Natural Selection"?

(vii) What is ganglion? What is Meninges?

(viii) Name a viral and a protozoan disease borne from female mosquito.

**4. Answer any ten questions: 3x10=30**

(i) Mention three methods of excretion in plants

(ii) Mention two structural and one functional difference between axon and Dendron.

(iii) Name the parts of middle ear. What is the role of Ear-Drum in

hearing? 2+1

(iv) Discuss in brief about 'dominant' and 'recessive' character from the result found by Mendel's monohybrid cross.

(v) Mention one adaptive feature of stem and two adaptive feature of leaf in lotus for aquatic adaptation.

(vi) Why mitosis division in plants is called 'anastral division' ? Write two differences between plant cytokinesis and animal cytokinesis. 1+2

(vii) Mention three reasons for selection of pea by Mendel for his experiments.

(viii) Mention three differences between sexual and asexual reproduction.

(ix) How does Hepatitis transmit from one person to other? Mention one precaution to be taken against this disease. 2+1

(x) Define Allele? Mention two differences between Plant mitosis and animal mitosis division. 1+2

(xi) Why Meiosis is called 'reductional cell division'? Write the full name of CSF. 2+1

(xii) What is gene? What do you mean by 'Interphase Stage' in cell division? 1+2

(xiii) Mention three contrasting characters selected by Mendel for his experiment on Pea Plant. 1+2

**Group 'B'**

(Answer any *five* questions from

Question No. 5 to Question No. 11)

5. What is Nephron? Discuss in brief how urine is formed after reabsorption in Kidney. Discuss the role of Lungs in excretion. 1+3+1
6. Which hormone is called "Emergency hormone" and why? Mention the source and two function of gibberellin. 2+3
7. Discuss the Second law of heredity with the help of Mendel's dihybrid cross experiment. If a sperm with X-chromosome is fertilized in a ovary then what will be the sex of the offspring? 4+1
8. Define 'chromatids' and 'centromere'. Write two differences between Prokaryotic and Eukaryotic cell. 3+2
9. Discuss the structure of heart of different vertebrates in support of organic evolution.
10. How many types of 'struggle for existence' are there according to Darwin? Write two functions of nervous system. 3+2
11. Write one adaptive feature of each of the following: 1x5
  - (a) Air sac of pigeon
  - (b) Scales of fish
  - (c) Seed of lotus
  - (d) Gills of Rohu
  - (e) Leaf surface of Sundri.

### Group 'C'

(Answer any **one** question)


12. Draw a neat and scientific diagram of the Vertical section of human eyeball and label the following parts:

(a) Cornea (b) Sclera (c) Choroid (d) Lens (e) Retina (f) Blind spot  
5+3=8

13. Draw a neat and scientific diagram of Nephron and label the followings:

(a) Afferent arteriole (b) Glomerulus (c) Bowman's Capsule (d) Proximal convoluted tubule (e) Distal convoluted tubule (f) Henle's loop  
5+3=8

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- *By Vinay Kumar* (B.Sc., CU)

 **9903016147**