

[REF]
Whitefield International College
Town Planning, Nayabazar, Kathmandu

ASSIGNMENT

Class: XII
Subject: Biology

F.M-100
P.M.-40

Botany

1. **Answer in very short.** 7X1=7

- a. Define heredity and variation.
- b. Write two characteristics of genetic code.
- c. What is transcription? Where does it occur?
- d. Write the genetic formula of trisomy.
- e. Give two examples of polygenic inheritance.
- f. Write the function of cambium.
- g. What is lenticel?
- h. Give one difference between transpiration & guttation.
- i. What do you mean by diffusion pressure deficit?
- j. What type of vascular bundle is found in monocot stem?

2. **Answer in brief.** 5X3=15

- a) Why is a man unable to pass a sex-linked gene to his son?
- b) Describe in brief an experiment to prove DNA as genetic material.
- c) State and explain Mendel's law of segregation.
- d) Write about apical meristem.
- e) Draw a labeled diagram of monocot root.
- f) Mention the significances of osmosis.
- g) Differentiate between dicot and monocot leaf.

3. Describe in detail about the process of semi-conservative method of DNA replication. 7.5

4. Describe the process of secondary growth in Dicot stem. 8

OR

Write advantages of transpiration. Explain the factors affecting transpiration in plants. 8

Zoology

1. **Answer in very short.** 7X1=1

- a) Define haversian system.
- b) Name the longest cell in body.
- c) What is the function of mast cell?
- d) Define emulsification.
- e) What is chyme?
- f) Give names of two proteolytic enzymes.
- g) Name the muscles involved in inspiration process of man.

- h) What is tidal volume?
- i) Define chloride shift.
- j) What is hilum?

2. **Answer in short. (Any Five)**

5X3=15

- a) Write short notes on cardiac muscles.
- b) Justify pancreas as heterocrine gland.
- c) Give differences between active and passive absorption.
- d) Describe exchange of respiratory gases in Lungs.
- e) Describe Bohr's effect.
- f) Draw a well labeled diagram of section of kidney.
- g) Point out functions of liver in man.

3. Give an account of alimentary canal in man. 7.5

OR

Describe physiology of respiration in man. 7.5

4. Give an account of respiratory organs in Man. 8

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Botany

1. **Answer in very short.** 7X1=7

- a. Define diffusion.
- b. What is dendrochronology?
- c. Define exarch xylem with an example.
- d. What is the function of vascular cambium?
- e. What do you mean by hypertonic & hypotonic solutions?
- f. What are the sources of variation?
- g. Define polygenic inheritance. Give two examples.
- h. What is epistasis? Mention its types.
- i. What are the properties of genetic material?
- j. Distinguish between genotype & phenotype.

2 **Answer in brief.** 5X3=15

- a) Write significance of osmosis.
- b) Explain the types of meristematic tissue on the basis of its position.
- c) Differentiate between xylem & phloem.
- d) Write identifying characters of dicot root with well labeled diagram.
- e) State & explain Mendel's law of segregation with a suitable example.
- f) Write a short note on linkage.
- g) Distinguish between incomplete and co-dominance.

3. Describe anatomical structure of dicot system with well labeled diagram.

OR

Describe an experiment to demonstrate the process of osmosis by using egg membrane. 7.5

4. Explain the semi-conservative mode of DNA Replication. 8

Zoology

1. Answer any seven questions in very short. (7x1=7)

- a) What is ligament?
- b) Write dental formula of adult man.
- c) Name two proteolytic enzymes.
- d) Name endocrine part of pancreas.
- e) Define dead space.
- f) What is Bohr effect?
- g) Which pigment gives colour to urine?

- h) Define hilum.
- i) What is metastasis?
- J) Define infection.

2. Answer any five questions in short. (5x3=15)

- a) Give differences between bone and cartilage.
- b) Point out functions of liver (any six)
- c) Describe chloride shift.
- d) Draw a labeled diagram of internal structure of kidney.
- e) Describe the process of osmoregulation in man.
- f) Give differences between malignant and non malignant tumour.
- g) How is carbon dioxide transported?

3. Give an account of alimentary canal of man. (7.5)

OR

What are infectious diseases? Describe the causative organism, mode of infection, incubation period, symptoms, diagnosis, treatment and control measures of Ascariasis.

4. Describe mechanism of urine formation in nephron of man. (8)

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Botany

1. Answer in very short.(Any seven) 7x1=7
 - a. What is heredity?
 - b. Define genotype.
 - c. What are the requirements of protein synthesis?
 - d. What is test cross?
 - e. Write two properties of genetic code..
 - f. Mention the function of lateral meristem
 - g. Name two complex permanent tissues
 - h. What is the role of chlorenchyma?
 - i. Define Diffusion pressure deficit.
 - j. What is osmosis?
2. Answer in brief.(Any five) 5x3=15
 - a. Write characteristic features of meristematic tissues.
 - b. State and explain Mendel's law of segregation.
 - c. Write a short note on linkage.
 - d. Describe an experiment to prove DNA as a genetic material.
 - e. Write significance of osmosis.
 - f. Explain the types of transpiration.
 - g. Differentiate between dicot and monocot root.
3. Describe semi-conservative mode of DNA replication. 8
4. Describe the anatomical features of dicot stem with necessary diagram. 7.5

Zoology

1. Answer in very short.(Any seven) 7x1=7
 - a. Name the tissue lining hair, claws and nails.
 - b. What is tendon?
 - c. Write two properties of cardiac muscles.
 - d. Write dental formula of adult man.
 - e. Name two proteolytic enzymes.
 - f. Differentiate chyme and chyle.
 - g. What are pathogens?
 - h. Give the causative agent of typhoid.
 - i. Define biotic potential.
 - j. What is zero growth rate?
2. Answer in short. 5x3=15

- a. Write short notes on Adipose tissue.
 - b. Give differences between striated and unstriated muscles.
 - c. Point out functions of Liver in man.
 - d. Give differences between active and passive absorption.
 - e. Describe causes of typhoid.
 - f. Give differences between J shaped and S shaped curves.
 - g. Justify pancreas is heterocrine gland.
 3. Give an account of alimentary canal in man. 7.5
 4. Describe the causative organism, modes of infection, incubation period, symptoms, treatment, diagnosis and control of tuberculosis. 8
- OR**
- Describe the causative organism, modes of infection, incubation period, symptoms, treatment, diagnosis, and control of Ascariasis.

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Botany

2. Answer in very short.(Any seven) 7x1=7
- Define phenotype
 - What do you mean by polygenic inheritance?
 - What are the requirements of protein synthesis?
 - What is epistasis?
 - Write the difference between incomplete dominance and codominance.
 - What is guttation?
 - Write full form of ATP and NADP.
 - What kind of vascular bundle is found in dicot stem?
 - What do you mean by dendrochronology?
 - Name the thin walled cell with chloroplast.
2. Answer in brief.(Any five) 5x3=15
- Differentiate between C3 and C4 plants.
 - Write significance of osmosis.
 - Draw a labeled diagram to show internal structure of monocot stem.
 - What is genetic code? Describe its properties.
 - Define mutation. Explain about gene mutation.
 - State and explain Mendel's law of segregation.
 - Write a short note on linkage.
3. What is DNA? Describe the process of semi conservative mode of DNA replication. 8
4. Describe the process of secondary growth in dicot stem with necessary diagram. 7.5
- Or
- Explain cyclic and non cyclic photophosphorylation with necessary charts.

Zoology

1. Answer in short on any seven 7x1=7
- What is vaccine?
 - Why are bones brittle in old age?
 - What is metastasis?
 - Mention the role of mast cells.
 - Why a drunk person should not drive?
 - Differentiate between spermatogenesis and oogenesis.

- Define ligament.
- Give reasons why micromere cells in frog's embryo are fast dividing?
- Differentiate between animal pole and vegetal pole of frog's egg?
- Name the causative agent of typhoid?

2. Answer in brief on any five. (5x3=15)

- Differentiate between cartilage and bones.
 - List the process of segmentation of the egg of frog.
 - Mention the functions of connective tissue.
 - Differentiate between benign and malignant tumour.
 - Discuss the reasons of drug abuse and control measures to prevent it.
 - Describe the structure of frog's gastrula.
 - Define addiction. Discuss different types of drugs and their effects.
3. What are communicable diseases? Describe the causative agent, mode of infection, symptoms, diagnosis and treatment of kalazar. (7.5)
- OR,**
- How does fertilization take place in frog? Describe embryonic development up to formation of blastula.
4. What is cancer? Discuss its types, causes, symptoms, control measures, diagnosis and treatment. (8)

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Botany

1. Answer in very short. (Any seven) **1x7=7**

- a. Define heredity.
- b. What do you mean by polygenic inheritance?
- c. Distinguish between leading and lagging strand.
- d. What are the sources of variation?
- e. Define crossing over.
- f. Define plasmolysis.
- g. What is Osmosis?
- h. Define Dendrochronology.
- i. What do you mean by secondary growth?
- j. What is ambicribal vascular bundle? Give example.

2. Answer in brief (Any five) **5x3=15**

- a. Distinguish between incomplete dominance and co-dominance.
- b. Write short note on linkage.
- c. Define monohybrid cross. Explain it with suitable example.
- d. Write significance of osmosis to plants.
- e. What are the factors that affect diffusion?
- f. Differentiate between dicot and monocot root.
- g. Write characteristic features of meristematic tissues.
3. Define sex linked inheritance. Explain it with example of eye color of drosophila.(7.5)
4. Describe anatomical structure of Monocot stem with well labeled diagram. (8)

Zoology

1. Very short answer questions (Attempt any seven) **7x1=7**

- a) Where does transitional epithelium present & what its function?
- b) What is haversian canal system?
- c) What is difference between blastocoel & archenteron?
- d) Name the fat soluble vitamins.
- e) Name the disease caused by the deficiency of iron & calcium.
- f) Why HIV/AIDS is called immune-suppressed disease?
- g) Write the full name of ELISA & BCG.
- h) What is the functions of Mast cells?
- i) Where does cerebro spinal fluid form?

2. Short answer questions (Attempt any five) **5x3=15**

- a) Explain about glandular epithelium tissue.
- b) Explain structure, occurrence & functions of areolar tissue.
- c) Explain about parasitic disease which you have studied?
- d) What is balance diet? Differentiates between Marasmus &Kashiorkor.
- e) Differentiate between stripped muscle & unstripped muscle.
- f) Explain about formation of three germ layers during development of frog.

3. Describe the various types of simple epithelial tissues with diagram. **7.5**

OR

Describe the process of gastrulation with diagram during the development of frog.

4. What is **DOTS? Discuss the causative agent, symptoms, transmission, incubation period, diagnosis, treatment & preventive measures of **tuberculosis**.**

"The End"