

2017 (A)

BIOLOGY-II (Zoology)

Full Marks - 35

Time - 1.5 Hours

The figures in the right hand margin indicate marks.

Instructions are given in each Group.

Illustrate your answer with labelled diagrams and examples wherever necessary

GROUP - A

Answer All questions serially

1. Choose the correct answer from the choices given under each bit. Answer in one word :
[1 × 5]
 - (a) Which parasite causes amoebic dysentery ?
 - (i) E. Coli
 - (ii) A. Proteus
 - (iii) E. histolytica
 - (iv) P. vivax
 - (b) Which antibody initiates allergic reactions ?
 - (i) Ig G
 - (ii) Ig D
 - (iii) Ig A
 - (iv) Ig E
 - (c) Which hormone is secreted during emotional states such as fear, anger and pain ?
 - (i) Insulin
 - (ii) Thyroxine
 - (iii) Adrenaline
 - (iv) Oxytocin
 - (d) What is conservation of biodiversity outside the natural habitat called as ?
 - (i) In-Situ
 - (ii) In-Vitro
 - (iii) In-Vivo
 - (iv) Ex-Situ
 - (e) Which enzyme is used to join fragments of DNA ?
 - (i) Ligase
 - (ii) Polymerase
 - (iii) Endonuclease
 - (iv) Transferase

2. Fill up the blanks with correct answer(s) / Correct the underlined portion of the sentence :
[1×4=4]

- (a) The confirmative test for AIDS is _____ blotting.
- (b) Red data book is published by _____.
- (c) Cerebral Malaria is caused by Plasmodium vivax.
- (d) The preservation of semen at very low temperature is called remediation.

GROUP - B

3. Answer any four of the following : [2×4=8]
(Restrict your answers to two or three important sentences each)
 - (a) What is National Park ?
 - (b) What are the causes of female infertility ?
 - (c) Mention the causes of drug addiction.
 - (d) What is 'Algal bloom' ?
 - (e) Write the functions of placenta.
 - (f) What is Arbor Vitae ?
 - (g) What is Linkage ? Mention its Significance.
 - (h) Write the forensic applications of DNA fingerprinting.
4. Differentiate between any two of the following pairs : [3×2=6]
(Restrict each answer three to four important sentences)
 - (a) Active immunity and passive immunity
 - (b) Vasectomy and Tubectomy
 - (c) Spermatogenesis and Oogenesis
 - (d) Down's Syndrome and Turner's Syndrome

GROUP - C

Answer any two of the following questions :

5. Describe the structure and functions of human forebrain. [2×6=12] [6]
6. What is sex-linked inheritance ? Explain the inheritance of colourblindness in man. [6]
7. Discuss the mechanism of conduction of nerve impulses along a nerve fibre. [6]
8. Write notes on any two of the following [3×2=6]
 - (a) AIDS
 - (b) Acid rain
 - (c) Radioactive waste
 - (d) Budding in Hydra

2016 (A) (SET-A)

BIOLOGY-II (Zoology)

Full Marks - 35

Time - 2 Hours

The figures in the right hand margin indicate marks.
Instructions are given in each Group.

Illustrate your answer with labelled diagrams
and examples wherever necessary

GROUP - A

Answer All questions serially

1. Choose the correct answer from the choices given under each bit. Answer in one word :

[1 × 5

- (a) During which stage of oogenesis the number of chromosomes is reduced to half ?
(i) Formation of first polar body
(ii) Formation of second polar body
(iii) Meiosis-II
(iv) Division of secondary oocyte
- (b) Which procedure is followed for amplification of DNA?
(i) Southern blotting
(ii) Electrophoresis
(iii) Autoradiography
(iv) Polymerase Chain Reaction
- (c) In which type of chromosomal aberration a submetacentric chromosome may be converted to a metacentric chromosome ?
(i) Deletion
(ii) Duplication
(iii) Paracentric Inversion
(iv) Pericentric Inversion
- (d) During conduction of nerve impulse, what causes repolarisation of nerves ?
(i) Influx of Sodium ions
(ii) Efflux of Sodium ions
(iii) Efflux of Potassium ions
(iv) Influx of both Sodium and Potassium ions
- (e) Which one of the following is not included under in-situ conservation ?
(i) National Park (ii) Wildlife Sanctuary
(iii) Zoological Garden (iv) Biosphere Reserve

2. Fill up the blanks with correct answer(s) / Correct the underlined portion of the sentence : [1×4=4

- (a) FSH and LH are secreted by _____ endocrine gland.
(b) Urea is synthesized in the _____ of man.
(c) The yellow coloured milk secreted by mother just after child birth is called neonatal milk.
(d) Increased 'algal bloom' in pond and lake due to excess of nutrients is a phenomenon called biological magnification.

GROUP - B

3. Answer any four of the following : [2×4=8

(Restrict your answers to two or three important sentences each)

- (a) What is Autonomic Nervous System ?
(b) State the functions of Yolk.
(c) What are Interferons ?
(d) What is 'Criss-cross Inheritance' ?
(e) State the cause, symptoms and prevention of Filariasis.
(f) What is Bee wax ?
(g) What are benign and malignant tumours ?
(h) State the role of Insulin.

4. Differentiate between any two of the following pairs : [3×2=6

(Restrict each answer three to four important sentences)

- (a) Asexual reproduction and sexual reproduction
(b) B-lymphocyte and T-lymphocyte
(c) Renewable and non-renewable resources
(d) Herbicides and Insecticides

GROUP - C

Answer any two of the following questions : [2×6=12

5. What do you understand by Reflex Action ? Describe its structural components and mechanism. [6
6. Give an account of the human male reproductive system. [6
7. Discuss the chromosomal theory of sex determination in animals. [6
8. Write notes on any two of the following [3×2=6
- (a) Diencephalon
(b) Barrier and surgical method of birth control
(c) Ozone depletion
(d) Feedback mechanism in hormone action

2015 (A) (SET-A)

BIOLOGY-II (Zoology)

Full Marks - 35

Time - 2 Hours

The figures in the right hand margin indicate marks.

Instructions are given in each Group.

Illustrate your answer with labelled diagrams and examples wherever necessary

GROUP - A

Answer All questions serially

1. Choose the correct answer from the choices given under each bit. Answer in one word :

[1 × 5

(a) Which function / (s) is / (are) controlled by corpora quadrigemina ?

- (i) Auditory reflex
- (ii) Both vision and olfactory
- (iii) Both vision and auditory
- (iv) Heart beat

(b) Which is not associated with vasopressin ?

- (i) Tabular reabsorption
- (ii) Vaso constriction
- (iii) Diabetes insipidus
- (iv) Diabetes mellitus

(c) Which organ's outer covering is tunica albuginea ?

- (i) Ovary
- (ii) Testis
- (iii) Brain
- (iv) Kidney

(d) Through which vector is *wuchereria bancrofti* transmitted ?

- (i) Aedes
- (ii) Anopheles
- (iii) Tse tse fly
- (iv) Culex

(e) Which chromosome-linked genes do cause the genetic metabolic disorder Phenylketonuria (PKU) ?

- (i) Somatic recessive gene
- (ii) Somatic dominant gene
- (iii) X-linked gene
- (iv) Y-linked gene

2. Fill up the blanks with correct answer(s) / Correct the underlined portion of the sentence :

[1×4=4

(a) The hormone _____ stimulates the secretion of milk.

(b) L.S.D. is a natural _____ drug.

(c) The primary germ layers are formed during morula stage of embryonic development.

(d) The genotypic ratio in F_2 generation of Mendel's monohybrid cross is 9 : 3 : 3 : 1.

GROUP - B

3. Answer any four of the following : [2×4=8

(Restrict your answers to two or three important sentences each)

- (a) How does asexual reproduction take place in sponges ?
- (b) How can AIDS be prevented ?
- (c) What is fertilization ? In man, where does it take place ?
- (d) What is biosphere reserve ? Mention its zones.
- (e) Write the possible causes of female infertility in relation to ovulation.
- (f) What are the sources of radioactive pollution ?
- (g) Write the symptoms of Down's syndrome.
- (h) What are restriction enzymes ? Mention their functions in recombinant DNA technology.

4. Differentiate between any two of the following pairs : [3×2=6

(Restrict each answer three to four important sentences)

- (a) Corpus callosum and corpus luteum.
- (b) Insulin and Glucagon
- (c) Binary fission and Multiple fission
- (d) Inversion and Translocation

GROUP - C

Answer any two of the following questions :

[2×6=12

- 5. Explain the mechanism of conduction of impulses along nerve fibres. [6
- 6. What is sex-linked inheritance ? Discuss the inheritance of haemophilia in man. [6
- 7. What is immunity ? Give an account of cell-mediated immunity. [6
- 8. Write notes on any two of the following [3×2=6
 - (a) Oogenesis
 - (b) Law of independent assortment
 - (c) Biomagnification
 - (d) Social life of honeybees

2014 (A) (SET-A)

BIOLOGY-II (Zoology)

Full Marks - 35

Time - 2 Hours

The figures in the right hand margin indicate marks.
Instructions are given in each Group.

Illustrate your answer with labelled diagrams
and examples wherever necessary

GROUP - A

Answer All questions serially

1. Choose the correct answer from the choices given under each bit. Answer in one word :

[1 × 5]

- (a) Which hormone is secreted by the Leyding Cells ?
(i) Vasopressin (ii) Gonadotropins
(iii) Oxytocin (iv) Testosterone
- (b) From which part of the spermatid is acrosome formed ?
(i) Nucleus (ii) Mitochondria
(iii) Golgi bodies (iv) Ribosome
- (c) Which is the infective stage of **Plasmodium falciparum** ?
(i) Sporozoite (ii) Trophozoite
(iii) Cryptozoite (iv) Merozoite
- (d) Which term did Mendel use to denote something in germ cells responsible for transmission of characters ?
(i) Chromosome (ii) Elementle
(iii) Factor (iv) Gene
- (e) Which one of the following phenomena is involved in the conduction of nerve impulse ?
(i) Biochemical (ii) Biophysical
(iii) Electrical (iv) Electrochemical

2. Fill up the blanks with correct answer(s) / Correct the underlined portion of the sentence :

[1 × 4 = 4]

- (a) The fusion of male and female pronuclei is called _____.

- (b) Wildlife Protection Act was enacted in the year _____ by Government of India.
- (c) The giant honey bee, yielding maximum honey is Apis mellifera.
- (d) The genotype of a carrier of haemophilia is X^H X^h.

GROUP - B

3. Answer any **four** of the following : [2 × 4 = 8]
(Restrict your answers to **two** or **three** important sentences each)

- (a) State the significance of crossingover.
(b) How is the AIDS provirus formed ?
(c) What is "Ozone Shield" ?
(d) How is tubectomy effective in birth control ?
(e) How are kidney stones formed ?
(f) What is BOD ?
(g) How does multiple fission occur in **Amoeba** ?
(h) What are the forensic applications of DNA finger printing ?

4. Differentiate between any **two** of the following pairs : [3 × 2 = 6]
(Restrict each answer **three** to **four** important sentences)

- (a) Phenotype and genotype
(b) Active immunity and Passive immunity
(c) In-Situ conservation and Ex-Situ conservation
(d) Adenohypophysis and Neurohypophysis

GROUP - C

Answer any **two** of the following questions :

[2 × 6 = 12]

5. Describe the structure and functions of human fore-brain. [6]
6. Give an account of the human female reproductive system. [6]
7. Explain the chromosomal basis of sex determination in animals. [6]
8. Write notes on any **two** of the following [3 × 2 = 6]
(a) Reflex action
(b) Innate immunity
(c) Greenhouse effect
(d) Inheritance of colour blindness in man

2013 (A)

BIOLOGY-II (Zoology)

Full Marks - 35

Time - 2 Hours

The figures in the right hand margin indicate marks.

Instructions are given in each Group.

Illustrate your answer with labelled diagrams and examples wherever necessary

GROUP - A

Answer All questions serially

1. Choose the correct answer from the choices given under each bit. Answer in one word :

[1 × 5]

- (a) Which of the following prevents the blood to clot inside vessels ?
(i) Prothrombin (ii) Calcium
(iii) Plasminogen (iv) Heparin
- (b) Which types/type of cell division occur(s) in cells of testis at different phases of spermatogenesis ?
(i) Only meiotic
(ii) Only mitotic
(iii) Both mitotic and meiotic
(iv) Amitotic
- (c) Which of the following types of sex determination is found in grasshopper ?
(i) XX Female and XY Male
(ii) ZW Female and ZZ Male
(iii) XX Female and XO Male
(iv) XX Male and XO Female
- (d) Which enzyme helps in joining DNA fragments ?
- (e) Which chemical substance takes part in synaptic transmission ?
2. Fill up the blanks with correct answer(s). Correct the underlined portion of the sentence : [1×4=4]
- (a) _____ hormone stimulates corpus luteum of ovary to produce progesteron.
- (b) _____ test is specifically employed to determine the presence of disease causing Salmonella typhi.

- (c) Urea cycle of man was first postulated by Bantin and Best in 1932.
- (d) While the enamel of teeth is formed from mesoderm, the dentine is formed from endoderm.

GROUP - B

3. Answer any four of the following : [2×4=8]

(restrict your answers to two or three important sentences each)

- (a) Explain "ammonotelism" with example.
(b) What is erythroblastosis foetalis ?
(c) Write the functions of placenta.
(d) What is inversion ? What are its types ?
(e) Explain "Immunity theory" of ageing.
(f) Explain the use of anthrax in biowar.
(g) What is endoscopy ?
(h) How AIDS can be prevented ?

4. Differentiate between any two of the following pairs : [3×2=6]

(Restrict each answer three to four important sentences)

- (a) Unconditioned Reflex and Conditioned Reflex
(b) Diabetes mellitus and Diabetes insipidus
(c) Stimulant and Hallucinogens
(d) B-lymphocytes and T-lymphocytes

GROUP - C

Answer any two of the following questions :

[2×6=12]

5. Describe the internal structure of human heart with suitable diagram. [6]
6. What is sex-linked inheritance ? Explain the inheritance of haemophilia in man. [6]
7. Give an account of male reproductive system of man. [6]
8. Write notes on any two of the following [3×2=6]
- (a) Budding in hydra
(b) Depolarization and Repolarization
(c) Retina
(d) Leucocytes