Total number of printed pages–11

3 (Sem–6/CBCS) ZOO HE 3/4

2022

ZOOLOGY

(Honours Elective)

Answer the Questions from any one Option.

OPTION–C

(Reproductive Biology)

Paper : ZOO–HE–6036

OPTION–D

(Wildlife Conservation and Management)

Paper : ZOO–HE–6046

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

Contd.

OPTION–C

(Reproductive Biology)

Paper : ZOO–HE–6036

1. Answer the following as directed : ***(any seven)*** 1×7=7

   (a) Define biopotential gonads.

   (b) SRY gene encode _____.
   (Fill in the blank)

   (c) The glycoprotein layer surrounding the plasma membrane of mammalian oocyte

   (i) Zona pellucida

   (ii) Corona radiata

   (iii) Cumulus oophorus

   (iv) Theca interna
   (Choose the correct option)

   (d) _____ is a network of tubules that carries sperm from seminiferous tubules to the efferent duct.
   (Fill in the blank)

   (e) Mullerian inhibiting hormone is unique to genetic males in early development.
   *(State True **or** False)*

(f) _____ is a neurohormone that contributes to the mechanism of parturition. *(Fill in the blank)*

(g) The number of offsprings an individual or a population is able to produce during a given period of time

(i) Fecundity

(ii) Age structure

(iii) Population density

(iv) Inbreeding

(Choose the correct option)

(h) The diagnosis of early pregnancy is based primarily upon presence of _____ in urine or blood.

(Fill in the blank)

(i) Follicular atresia is

(i) Formation of corpus luteum

(ii) Degeneration of follicles

(iii) Formation of Graafian follicle

(iv) Increase in number of follicles

(Choose the correct option)

(j) Capacitation occurs in

(a) rete testis

(b) epididymis

(c) vas deferens

(d) female reproductive tract

(Choose the correct option)

2. Answer the following questions : ***(any four)*** 2×4=8

(a) State the functions of sertoli cells.

(b) What are epididymosomes ?

(c) Write the functions of spermatogonial stem cells.

(d) Draw a labelled structure of the Graafian follicle.

(e) Name the hormones involved in lactation.

(f) What are prostaglandins ?

(g) State the density dependent factors affecting population growth.

(h) How does birth control pills work ?

3. Answer the following questions : ***(any three)*** 5×3=15

(a) Enumerate on the role of epididymis in sperm maturation.

(b) Describe the histological structure of the testis.

(c) Write the functions of accessory sex glands in males.

(d) State the process of formation and regression of corpus luteum.

(e) What is embryo implantation and how does it occur ?

(f) Describe the role of hormones in pregnancy.

(g) What is meant by infertility ? What are the causes of male infertility ?

(h) Discuss the ethical issues related to Assisted Reproductive Technology.

4. Answer ***any three*** from the following : 10×3=30

(a) Describe the functional organization of hypothalamic - pituitary gonadal axis.

(b) Write in detail the cellular mechanisms governing formation of testis.

(c) Write a note on hormonal regulation of spermatogenesis.

(d) Elaborate the process of androgen biosynthesis.

(e) Describe the histological changes in the ovarian follicles as they undergo follicular development in human.

(f) Describe the structural changes that occur in the uterus over the course of the menstrual cycle and pregnancy.

(g) Elaborate on the estrous cycle phases in rat.

(h) What is Assisted Reproductive Technology ? Discuss the different methods of assisted reproduction.

OPTION–D

(Wildlife Conservation and Management)

Paper : ZOO–HE–6046

1. Answer ***any seven*** questions : 1×7=7

   (a) Define 'Wildlife'.

   (b) What is 'Red Data Book' ?

   (c) What is an 'endemic species' ?

   (d) What is a 'keystone species' ?

   (e) Write the full form of GIS.

   (f) Define 'Natality'.

   (g) In which year was the Wildlife (Protection) Act constituted.

   (h) When was 'Project Tiger' launched in India ?

   (i) Give *two* negative values of wildlife.

   (j) What is the full form of WWF ?

2. Answer very shortly : ***(any four)*** 2×4=8

   (a) Write about the need for wildlife census.

   (b) What is 'wildlife corridor' and mention its advantages.

(c) Enumerate *four* advantages of using Camera traps in Wildlife research.

(d) Establish the importance of 'Telemetry' in Wildlife studies.

(e) How does 'Conservation breeding' differ from that of 'Ex-situ Conservation' ?

(f) Mention *four* factors that affect population density in wild animals.

(g) How can genetic diversity of wild animals be preserved ?

(h) What do you mean by intrinsic values of wildlife ?

3. Answer in short : ***(any three)*** 5×3=15

(a) State the basic objectives of Biosphere Reserve. What are 'Core' and 'Buffer' zones ? 2+3=5

(b) Explain the ecological importance of a Mangrove Forest with examples.

(c) Write short notes on : ***(any one)***

(i) Conservation ethics of wildlife

(ii) Causes of wildlife depletion

(iii) Fertility schedules in wild animals

(iv) Hair identification in wild animals

(v) Faecal analysis of ungulates and carnivores

(d) What is GPS ? Why GPS instruments are used ? 2+3=5

(e) What is remote sensing ? Mention the working principle of remote sensing in relation to wildlife studies. 2+3=5

(f) Suggest measures to control Man-Leopard conflict.

(g) What are the methods of restoration of degraded wildlife habitats ?

(h) Elaborate on the prospects of wildlife tourism in Assam.

4. Answer elaborately : ***(any three)*** 10×3=30

(a) What are the aims and objectives of conservation of wildlife ? Why conservation of wildlife is an urgent agenda ? 3+7=10

(b) What is 'eco-sensitive area' ? Explain how excessive tourism leads to disturbance in wildlife inside protected areas. 2+8=10

(c) What are the objectives of habitat level recovery ? How can you distinguish it from the landscape level conservation plan ? 5+5=10

(d) Distinguish between 'Pug mark' and 'Hoof mark'. Give an account on the pug mark census technique for tiger census using tiger tracer. State the advantage of using Pug Impression Pad (PIP). 2+6+2=10

(e) State the basic criteria for the measurement of pugs of tiger. Differentiate hind pug mark from that of front pug marks with diagrams. How can you distinguish between a male and a female tiger ? 3+5+2=10

(f) Give an account on different viral diseases of wild animals.

(g) What is 'carrying capacity' in a protected area ? Enumerate the different steps to estimate the 'carrying capacity' of a wildlife habitat. 2+8=10

(h) Mention the importance of Protected Area Concept of wildlife conservation in India. Distinguish between a Wildlife Sanctuary and a National Park. How does a 'Conservation Reserve' differ from that of a 'Community Reserve' ?

2+4+4=10
