Class 12 Time : 1 hr
8-8-2016 Second Unit Test (First Term) in BIOLOGY M. Marks : 20

GENERAL INSTRUCTIONS:-
i) All questions are compulsory.
ii) Attempt all the parts of a question together.
iii) Give labelled diagrams and examples where ever required.

1. Select the correct option :- (½x2=1)

i) Usually, an egg cell from a human female contains
a) one X chromosome and one Y chromosome.
b) one X chromosome. c) one Y chromosome.
d) two X chromosomes. e) two Y chromosomes.

ii) The segregation principle states that in sexually reproducing diploid organisms the two copies of each gene
a) move together as a unit during meiosis.
b) separate from each other during mitosis.
c) will both wind up in either the sperm or egg.
d) must always be the same allele.
e) segregate from each other during meiosis.

2. What is the mode of function of CopperT? (1)

3. a) Give the term for prenatal diagnostic technique aimed to know the sex of developing foetus and to detect congenital disorders. (½)
b) Give technical name of female used to bring up in vitro fertilized egg to maturity. (½)

4. a) What is the clinical deficiency presented by haemophilic people?
b) What is the genetic cause of that deficiency? (1)

5. Give Reasons for the following :-
a) Human ovum is without much yolk or alecithal. (1)
b) Testes are extra-abdominal. (1)

6. Enlist any four possible reasons for infertility in human beings. (2)

7. In snapdragons, red flower color (R) is not completely dominant over white (r); the heterozygous condition produces pink flowers.
i) What will be the result of a cross between two pink-flowered snapdragons?
ii) Between a pink and a white one. (2)

8. What hormones promote the release of the female gamete from the follicle and on which day of the menstrual cycle does this phenomenon happen? What is this event called (2)

9. Name the techniques which are employed in following cases :

a) Transfer of an ovum collected from a donor into the fallopian tube of another female who cannot produce ova but can provide suitable environment for fertilisation and development……..
b) Embryo is formed in laboratory in which sperm is directly injected into ovum.
c) Semen collected either from husband or a healthy donor is artificially introduced either into vagina or uterus……..
d) Inability to produce children in spite of unprotected sexual cohabitation of a couple…… (2)

10. a) Sketch the section of the human Testis and label the important parts. (2)

b) Correct sequence of embryo development: (½)
A Gamete → Zygote → Morula → Blastula → Gastrula
B Gamete → Zygote → Blastula → Morula → Gastrula
C Gamete → Morula → Gastrula
D Gamete → Blastula→ Morula

c) What happens during fertilisation in humans after many sperms reach close to the ovum? (½)
A Cells of corona radiata trap all the sperms except one
B Only two sperms nearest the ovum penetrate zona pellucida
C Secretions of acrosome helps one sperm enter cytoplasm of ovum through zona pellucida
D All sperms except the one nearest to the ovum lose their tail.

11. In a paternity dispute, a type AB woman claimed that one of four men was the father of her type A child.
Which of the following men could be the father of the child on the basis of the evidence given?
Explain each case in detail.
Type A blood Group, Type B blood Group, Type O blood Group, Type AB blood Group (3)

-x-x-x-x-x-