KENDRIYA VIDYALAYA SANGATHAN

ZONAL INSTITUTE OF EDUCATION AND TRAINING, GWALIOR

SAMPLE QUESTION PAPER - TERM I (SET- 1)
SUBJECT: BIOLOGY
CLASS: XII

Time: 90 Minutes **Max. Marks: 35**

General Instructions:

1. The Question Paper contains three sections.

2. Section A has 24 questions. Attempt any 20 questions.

3. Section B has 24 questions. Attempt any 20 questions.

4. Section C has 12 questions. Attempt any 10 questions.

5. All questions carry equal marks.

6. There is no negative marking.

SECTION - A

Section –A consists of 24 questions. Attempt any 20 questions from this section. The first attempted 20 questions would be evaluated.

1. During microsporogenesis, meiosis occurs in

   (a) endothecium
   (b) microspore mother cells
   (c) microspore tetrads
   (d) pollen grains

2. Which of the following is not a water pollinated plant ?

   (a) Zostera
   (b) Vallisneria
   (c) Hydrilla
   (d) Cannabis

3. The Functional megaspore in an angiosperm develops into an

(a) endosperm

(b) embryo sac

(c) embryo

(d) ovule

4. A dioecious flowering plant prevents both

(a) autogamy and geitonogamy

(b) geitonogamy and xenogamy

(c) cleistogamy and xenogamy

(d) autogamy and xenogamy

5. Persistent nucellus is called as

(a) perisperm,

(b) nucellus

(c) endosperm

(d) hilum

6. Several hormones like hCG, hPL, estrogen, progesterone are produced by

(a) Ovary

(b) placenta

(c) Fallopian tube

(d) pituitary

7. The contraceptive ‘Saheli’

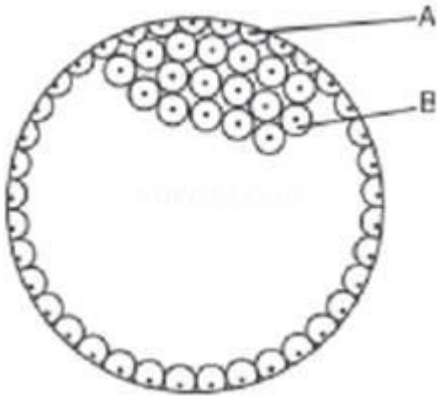
(a) blocks estrogen receptors in the uterus, preventing eggs from getting implanted

(b) increases the concentration of estrogen and prevents ovulation in females

(c) is an IUD

(d) is a post-coital contraceptive.

8. In the given figure, give the name of parts labeled A and B.



(a) A- inner cell mass, B- ectoderm

(b) A- inner cell mass, B- trophoblast

(c) A- trophoblast, B- inner cell mass

(d) A- ectoderm, B- inner cell mass

9. The signals for parturition originate from

(a) placenta only

(b) placenta as well as fully developed foetus

(c) oxytocin released from maternal pituitary

(d) fully developed foetus only

10. Which one of the following pairs of plant structures has haploid number of chromosomes?

(a) Nucellus and antipodal cells

(b) Egg nucleus and secondary nucleus

(c) Megaspore mother cell and antipodal cells

(d) Egg cell and antipodal cells

11. What is common between vegetative reproduction and apomixis?

(a) Both are applicable to only dicot plants.

(b) Both bypass the flowering phase.

(c) Both occur round the year.

(d) Both produce progeny identical to the parent

12. If an organism has AABB, then how many types of gametes can it produce?

(a) 1
(b) 2
(c) 3
(d) 4

13. Choose the chromosome, in a human, that possesses least number of genes

(a) 1st chromosome

(b) Autosome

(c) X –chromosome

(d) Y-chromosome

14. In sickle cell anaemia glutamic acid is replaced by valine. Which one of the following triplets codes for valine ?

(a) GGG

(b) A AG

(c) G A A

(d) GUG

15. Genotype in human beings AABBCC represents dark skin colour, aabbcc represents light skin colour and AaBbCc represents intermediate skin colour; name the type of pattern of genetic inheritance:

(a) Pleiotropy and codominance

(b) Pleiotropy and incomplete dominance

(c) Polygenic and qualitative inheritance

(d) Polygenic and quantitative inheritance

16. A fruit fly is heterozygous for sex-linked genes, when mated with normal female fruit fly, the males specific chromosome will enter egg cell in the proportion

(a) 3 : 1

(b) 7 : 1

(c) 1 : 1

(d) 2 : 1.

17. Which of the following characteristics represent 'inheritance of blood groups' in humans?

(i) Dominance

(ii) Co-dominance

(iii) Multiple allele

(iv) Incomplete dominance

(v) Polygenic inheritance

(a) (ii) and (iii)

(b) (i) and (v)

(c) (ii) and (iv)

(d) (i) and (iv)

18. Match the terms in column I with their description in column II and choose the correct option.

Column I	**Column II**
A. Dominance	(i) Many genes govern a single character
B. Co-dominance	(ii) In a heterozygous organism only one allele expresses itself
C. Pleiotropy	(iii) In a heterozygous organism both alleles express themselves fully
D. Polygenic	(iv) A single gene inheritance influences many characters

	A	B	C	D
(a)	(iv)	(i)	(ii)	(iii)
(b)	(iv)	(iii)	(i)	(ii)
(c)	(ii)	(i)	(iv)	(iii)
(d)	(ii)	(iii)	(iv)	(i)

19 The enzyme required for transcription is

(a) RNAase

(b) DNA dependence RNA polymerase

(c) RNA dependent RNA polymerase

(d) DNA dependence DNA polymerase

20. Removal of introns and joining the exons in a defined order in a transcription unit is called as

(a) Tailing

(b) Splicing

(c) Capping

(d) Initiation

21. In Select the two correct statements out of the four (i – iv) statements given below about lac operon.

(i) Glucose or galactose may bind with the repressor and inactivate it.

(ii) In the absence of lactose, the repressor binds with the operator region.

(iii) The z-gene codes for permease.

(iv) This was elucidated by Francois Jacob and Jacques Monod.

The correct statements are

(a) (ii) and (iii)

(b) (i) and (iii)

(c) (ii) and (iv)

(d) (i) and (ii).

22 Which one of the following is wrongly matched?

(a) Transcription - Writing information from DNA to mRNA.

(b) Translation - Using information in mRNA to make protein.

(c) Repressor protein - Binds to operator to stop enzyme synthesis.

(d) Operon - Structural genes, operator and promoter

23. The anticodon of initiation codon for protein synthesis is

(a) UUU

(b) AUG

(c) UAC

(d) CAU

24. DNA replication is

(a) conservative and discontinuous

(b) semi-conservative and semi-discontinuous

(c) semi-conservative and discontinuous

(d) conservative.

SECTION - B

Section - B consists of 24 questions (Sl. No.25 to 48). Attempt any 20 questions from this section. The first attempted 20 questions would be evaluated.

Question No. 25 to 28 consist of two statements – Assertion (A) and Reason (R).

Answer these questions selecting the appropriate option given below:

(a). Both A and R are true and R is the correct explanation of A

(b). Both A and R are true and R is not the correct explanation of A

(c). A is true but R is false

(d). A is False but R is true

25. **Assertion:** A Amniocentesis is often misused detect the sex of the unborn baby..
Reason: Amniocentesis is meant for determining the chromosomal/genetic disorders in the foetus, but is being used to determine the sex of the foetus so that female foetus may be aborted.

26. **Assertion:** Persons in the age group between 15-24 years is more vulnerable to sexually transmitted infections.
Reason: People in reproductive age get sexually transmitted infections during sexual intercourse with their partner

27. **Assertion:** Menstruation only occurs if the released ovum is not fertilized
Reason: Lack of menstruation may be indicative of pregnancy.

28. **Assertion**: Transcription is the mode in which DNA passes its genetic information to RNA.
Reason: Transcription takes place in the cytoplasm of eukaryotic cells.

29. Ten oogonia yield 10 primary oocytes, then how many ova are produced on completion of Oogenesis?

(a) 5
(b) 10
(c) 20
(d) 40

30. Geitonogamy involves

(a) fertilisation of a flower by the pollen from another flower of the same plant
(b) fertilisation of a flower by the pollen from the same flower
(c) fertilisation of a flower by the pollen from a flower of another plant in the same population
(d) fertilisation of a flower by the pollen from a flower of another plant belonging to a distant population.

31. Function of filiform apparatus is to
(a) recognise the suitable pollen at stigma
(b) stimulate division of generative cell
(c) produce nectar
(d) guide the entry of pollen tube.

32. An important factor contributing to the onset and maintenance of labour contractions is:
(a) Increased contractility of the uterine muscles from increased oxytocin levels.
(b) Mechanical pressure on the cervix generated by the emerging baby's head.
(c) Stretching of the uterus during the final stages of foetal growth.
(d) All of the above

33. Which Artificial Reproductive Technique can help a lady conceive a child if both her fallopian tubes are blocked?
(a) ICSI
(b) IVF

(c) ZIFT

(d) GIFT

34. Cu ions released from copper releasing intrauterine devices (IUDs)

(a) prevent ovulation

(b) make uterus unsuitable for implantation

(c) decrease phagocytosis of sperms

(d) suppress sperm motility.

35. The meiocytes of Wheat has 14 chromosomes. The number of chromosome in its endosperm is.

(a) 24

(b) 7

(c) 14

(d) 21

36. How many type of phenotype will be produced in the cross AaBb X AaBb

(a) 1

(b) 3

(c) 4

(d) 8

37. Independent assortment of genes does not take place when

(a) genes are located on homologous chromosomes

(b) genes are linked and located on same chromosome

(c) genes are located on non-homogenous chromosome

(d) all of these

38. In a plant, red fruit (R) is dominant over yellow fruit (r) and tallness (T) is dominant over shortness (t). If a plant with RRTt genotype is crossed with a plant that is rrtt,

(a) 25% will be tall with red fruit

(b) 50% will be tall with red fruit

(c) 75% will be tall with red fruit

(d) all the offspring will be tall with red fruit.

39.Pick out the correct statements.

(i) Haemophilia is a sex linked recessive disease.

(ii) Down's syndrome is due to aneuploidy

(iii) Phenylketonuria is an autosomal recessive gene disorder

(iv) Sickle cell anaemia is an X-linked recessive gene disorder

(a) (ii) and (iv) correct
(b) (i), (iii) and (iv) correct
(c) (i), (ii) and (iii) correct
(d) (ii) and (iv) correct

40. The colour blindness is more likely to occur in males than in females because

(a) the Y-chromosome of males have the genes for distinguishing colours
(b) genes for characters are located on the sex chromosomes
(c) the trait is dominant in males and recessive in females
(d) none of these

41. A human female with Turner's syndrome_____

(a) has 45 chromosomes with XO
(b) has one additional X chromosome
(c) exhibits male characters
(d) is able to produce children with normal husband

42. What will the amount of guanine in a DNA if the total amount of adenine and thiamine in the DNA is 45%?

a) 45%
b) 65%
c) 27.5%
d) 22.3%

43. The three codons which result in the termination of polypeptide chain synthesis are

(a) UAA, UAG, GUA
(b) UAA, UAG, UGA
(c) UAA, UGA, UUA
(d) UGU,UAG,UGA

44 Chemically, RNA is (i) reactive and (ii) stable as compared to DNA.

(a) (i) equally, (ii) equally
(b) (i) less, (ii) more
(c) (i) more, (ii) less
(d) (i) more, (ii) equally

45. Select the correct match of enzyme with its related function.

(a) DNA polymerase – Synthesis of DNA strands

(b) Helicase – Unwinding of DNA helix

(c) Ligase – Joins together short DNA segments

(d) All of these

46, Match the following

Column I	**Column II**
(A) Helicase	(M) activation of amino acid
(B) Peptidyl transferase	(N) joins DNA fragments
(C) DNA polymerase	(O) unwinds DNA helix
(D) DNA ligase	(P) peptide bonds between amino acids
(E) Aminoacyl synthetase enzyme	(Q) DNA synthesis
(F) RNA primase	(R) synthesis of RNA primer

a) A-O, B-P, C-Q, D-N, E-M, F-R

b) A-R, B-M, C-N, D-Q, E-P, F-O

c) A-M, B-R, C-P, D-Q, E-N, F-O

d) A-R, B- Q, C- A, D- M, E-P, F-N

47. What are the structures called that give an appearance as 'beads-on-string' in the chromosomes when viewed under electron microscope?

(a) Genes

(b) Nucleotides

(c) Nucleosomes

(d) Base pairs

48. Which one of the following statements about the particular entity is true ?

(a) Centromere is found in plant cells, which produces aster during cell division.

(b) The gene for producing insulin is present in every body cell, but it is not expressed in all cells

(c) Nucleosome is formed of nucleotides.

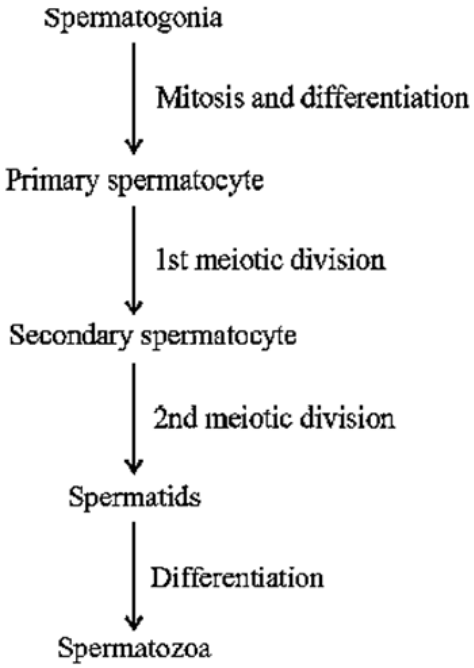
(d) DNA consists of core of eight histones.

SECTION - C

Section-C consists of one case followed by 6 questions linked to this case (Q.No.49 to 54). Besides this, 6 more questions are given. Attempt any 10 questions in this section. The first attempted 10 questions would be evaluated.

Spermatogenesis

Spermatogenesis is the production of sperms from male germ cells (spermatogonia) inside the testes (seminiferous tubule). This process begin at puberty. Observe the following flow diagram and answer the questions that follows-



49. This happens during spermatogenesis

(a) Meiosis

(b) Mitosis

(c) Meiosis and mitosis

(d) None of these

50. The process of spermatogenesis is induced by

(a) TSH

(b) FSH

(c) MSH

(d) ACTH

51. The number of spermatozoa, a single primary spermatocyte finally produced in spermatogenesis is

(a) 2

(b) 4

(c) 6

(d) 8

52. In spermatogenesis, the phases of maturation involve

(a) formation of spermatids from primary spermatocyte through meiosis

(b) growth of spermatogonia into primary spermatocytes

(c) formation of spermatogonia from gonocytes through mitosis

(d) formation of oogonia from spermatocyte through meiosis

53. The correct sequence of cell stage in spermatogenesis is

(a) spermatocyte → spermatids → spermatogonia → spermatozoa

(b) spermatogonia → spermatids → spermatocyte → spermatozoa

(c) spermatocytes → spermatogonia → spermatid → spermatozoa

(d) spermatogonia → spermatocytes→ spermatids → spermatozoa

54. The spermatids are transformed into spermatozoa (sperms) by the process called

(a) spermiogenesis

(b) spermiation

(c) spermatogenesis

(d) gametogenesis

55. If one parent belongs to 'A' blood group and the other to 'O' blood group, their children possibly represent.

(a) A and B groups only

(b) AB only

(c) A and O groups only

(d) All four groups

56. The main cause of Down syndrome is which of the following

(a) trisomy of 21nd chromosome

(b) tetrasomy of 21nd chromosome

(c) trisomy of 22nd chromosome

(d) tetrasomy of 22nd chromosome

57. A woman with two genes for haemophilia and one gene for colour blindness on one of the ‘X’ chromosomes marries a normal man. How will the progeny be?

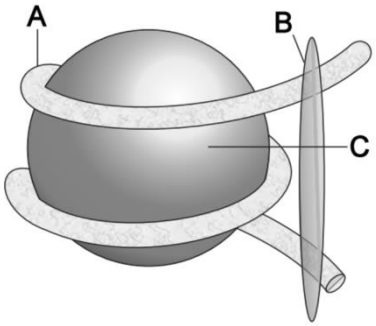
(a) 50% haemophilic colour-blind sons and 50% normal sons.

(b) 50% haemophilic daughters (carrier) and 50% colour blind daughters (carrier).

(c) All sons and daughters haemophilic and colourblind.

(d) Haemophilic and colour-blind daughters

58. A nucleosome is defined as a core region of histones plus one stretch of linker DNA. This gives a "beads on a string" shape, which can be further packaged into chromatin. Identify A, B and C part in nucleosome



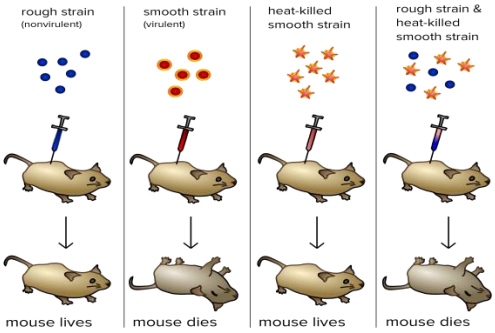
(a) RNA, Histone, Octamer

(b) DNA,H1 Histone, Histone Octamer

(c) RNA, Histone Octamer, Non Histone

(d) DNA, Histone, Non Histone

59. Fredrick Griffith's experiment involving Streptococcus pneumonia lead to the discovery of_____



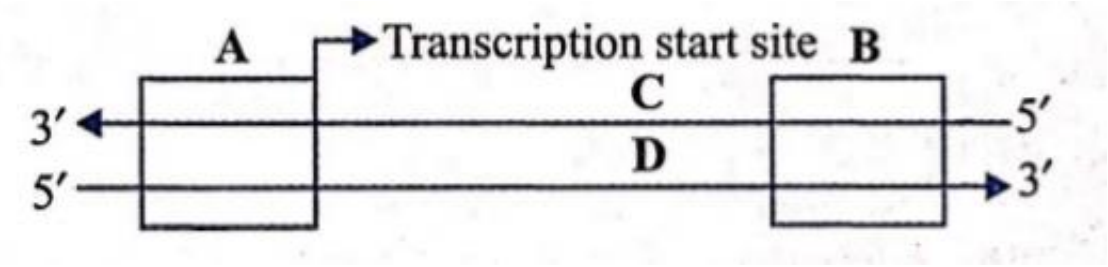
(a) DNA as genetic material

(b) RNA as genetic material

(c) Protein as genetic material

(d) Transforming principle

60. Given diagram represents the components of a transcription unit. Select the correct answer regarding it.



	A	B	C	D
(a)	Terminator	Promoter	Template strand	Coding strand
(b)	Promoter	Terminator	Coding strand	Template strand
(c)	Promoter	Terminator	Template strand	Coding strand
(d)	Terminator	Promoter	coding strand	Template strand

KENDRIYA VIDYALAYA SANGATHAN

ZONAL INSTITUTE OF EDUCATION, GWALIOR

SAMPLE QUESTION PAPER - TERM I (SET-1)

SUBJECT: BIOLOGY **CLASS: XII**

MARKING SCHEME

Q.NO	ANSWER	MARKS
	SECTION- A	
1	(b) microspore mother cells	0.70
2	(d) Cannabis	0.70
3	(b) embryo sac	0.70
4	(a) autogamy and geitonogamy	0.70
5	(a) perisperm	0.70
6	(b) placenta	0.70
7	(a) blocks estrogen receptors in the uterus, preventing eggs from getting implanted	0.70
8	(c) A- trophoblast, B- inner cell mass	0.70
9	(b) placenta as well as fully developed foetus	0.70
10	(d) Egg cell and antipodal cells	0.70
11	(d) Both produce progeny identical to the parent	0.70
12	(a) 1	0.70
13	(d)Y-chromosome	0.70
14	(d) GUG	0.70
15	(d) Polygenic and quantitative inheritance	0.70
16	(c) 1 : 1	0.70
17	(a) (ii) and (iii)	0.70
18	(d) (ii) (iii) (iv) (i)	0.70
19	(b) DNA dependence RNA polymerase	0.70
20	(b) splicing	0.70
21	(c) (ii) and (iv)	0.70
22	(d) Operon - Structural genes, operator and promoter	0.70
23	(c) UAC (anticodon, AUG – codon0	0.70
24	(b) semi-conservative and semi-discontinuous	0.70

SECTION – B		
25	(a)	0.70
26	(c)	0.70
27	(d)	0.70
28	(c) A is correct and and R is wrong because transcription in eukaryotes occur in nucleus not in cytoplasm.	0.70
29	(b) 10	0.70
30	(a) fertilisation of a flower by the pollen from another flower of the same plant	0.70
31	(d) guide the entry of pollen tube	0.70
32	(d) All of the above	0.70
33	(b)IVF	0.70
34	(d) Suppress sperm motility.	0.70
35	(d) 21	0.70
36	(c) 4	0.70
37	(b) genes are linked and located on same chromosome	0.70
38	(b) 50% will be tall with red fruit	0.70
39	(c) (i), (ii) and (iii) correct	0.70
40	(b) genes for characters are located on the sex chromosomes	0.70
41	(a) has 45 chromosomes with XO	0.70
42	(c)27.5%	0.70
43	(b) UAA, UAG, UGA	0.70
44	(c) (i) more, (ii) less	0.70
45	(d) All of these	0.70
46	(a) A-O, B-P, C-Q, D-N, E-M, F-R	0.70
47	(c) Nucleosomes	0.70
48	(b) Insulin gene is found in every body cell but is not expressed in all cells.	0.70
	SECTION - C	
49	(c) Meiosis and mitosis	0.70
50	(b) FSH	0.70
51	(b) 4	0.70

52	(a) formation of spermatids from primary spermatocyte through meiosis	0.70
53	(d) spermatogonia → spermatocytes→ spermatids → spermatozoa	0.70
54	(a) spermiogenesis	0.70
55	(c) A and O groups only	0.70
56	(a) trisomy of 21st chromosome	0.70
57	(b) 50% haemophilic daughters (carrier) and 50% colour blind daughters (carrier).	0.70
58	(b)DNA,H1 Histone, Histone Octamer	0.70
59	(d) Transforming principle	0.70
60	(c) Promoter Terminator Template strand Coding strand	0.70

KENDRIYA VIDYALAYA SANGATHAN

ZONAL INSTITUTE OF EDUCATION AND TRAINING, GWALIOR

SAMPLE QUESTION PAPER - TERM I
SUBJECT: BIOLOGY (SET 2)
CLASS: XII

Time: 90 Minutes **Max. Marks: 35**

General Instructions:

1. **The Question Paper contains three sections.**
2. **Section A has 24 questions. Attempt any 20 questions.**
3. **Section B has 24 questions. Attempt any 20 questions.**
4. **Section C has 12 questions. Attempt any 10 questions.**
5. **All questions carry equal marks.**
6. **There is no negative marking.**

SECTION A

Section – A consists of 24 questions. Attempt any 20 questions from this section. The first attempted 20 questions would be evaluated.

1) What is the function of filiform apparatus in an angiospermic embryo sac?

   a) Brings about opening of the pollen tube
   b) Guides the pollen tube into a synergid
   c) Prevents entry of more than one pollen tube into a synergid
   d) None of these

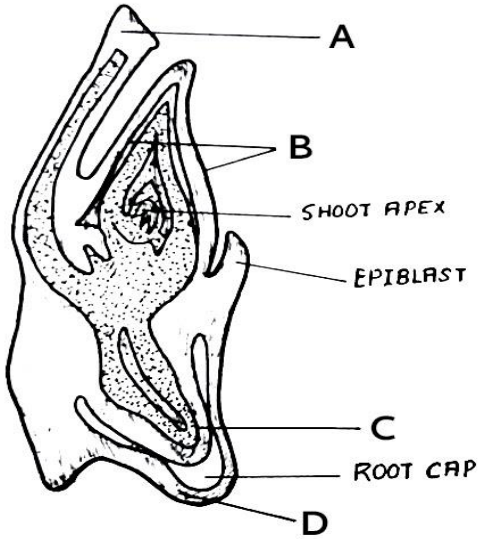
2) Embryo sac is to ovule as_____is to an anther

   a) Stamen
   b) Filament
   c) androecium
   d) Pollen grain

3) Which type of pollination brings genetically different types of pollen grains to the stigma

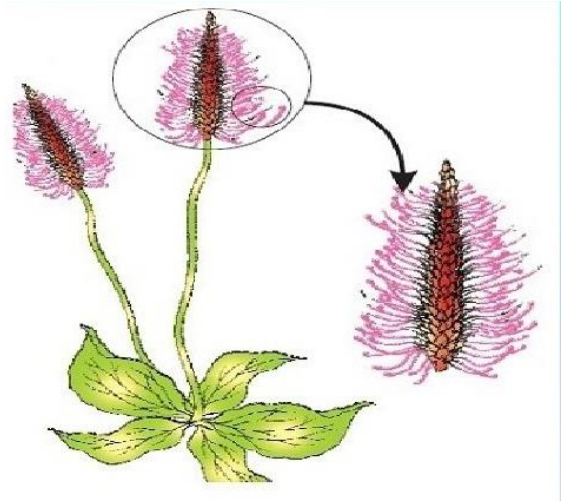
a) Autogamy
b) Xenogamy
c) Geitonogamy
d) Xenogamy and Geitonogamy

4) Name the parts in the given diagram of monocot embryo.



a) A- scutellum B-coleoptile C- Radicle D- coleorrhiza
b) A- radicle B- scutellum C-coleorrhiza D- coleoptile
c) A- scutellum B- coleorrhiza C- radicle D- coleoptile
d) none of the above

5. The diagram given below shows the pollination in a plant. The characteristic features that help in pollination of this plant are



a) light weight and non- sticky pollen grains, hidden stamens

b) colourful fragrant Flowers, well exposed stamens

c) light weight and non- sticky pollen grains, well exposed stamens

d) none of these

6) The part of fallopian tube closest to the ovary is

a) Isthmus
b) Infundibulum
c) Cervix
d) Ampulla

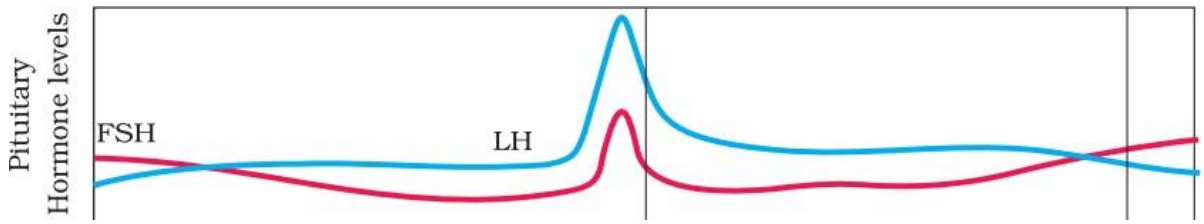
7) Seminal plasma in human male is rich in

a) Fructose and calcium
b) Glucose and calcium
c) DNA and testosterone
d) Ribose and potassium

8) The signal for parturition originate from

a) Placenta only
b) Placenta as well as fully developed foetus
c) Oxytocin released from maternal pituitary
d) Fully developed foetus

9) Which day in a normal human menstrual cycle does rapid secretion of LH normally occurs?



a) 14th Day
b) 28th Day
c) 5th Day
d) 11th Day

10) Which of the following statement is incorrect

a) Apomixis does not involve meiosis
b) Apomixis means production of seeds without fertilization
c) Apomixis does not involve fertilization
d) Apomictic seeds show segregation of characters

11) Pollen grains are stored in liquid nitrogen at

a) -1 98 Degree Celsius
b) -191 Degree Celsius
c) -1 90 Degree Celsius
d) - 196 Degree Celsius

12) In a test cross ,the crossing takes place between

a) Two F1 hybrids
b) Two genotypes with recessive trait
c) Two genotypes with dominant trait
d) Unknown dominant genotype with recessive parents

13) What will be the percentage of pea plant that would be homozygous recessive in the F2 generation when tall F1 heterozygous pea plant are selfed

a) 25%
b) 50 %
c) 75 %
d) 100 %

14) Pleiotropy can be defined as

a) one gene control
one trait
b) one gene exhibit multiple traits
c) multiple genes control one trait
d) multiple genes control multiple trait

15) How many gene/s is/ are involved in the inheritance of the following traits in human

I) Skin colour II) ABO blood group

a) I) 4 II) 2
b) I) 4 II) 3
c) I) 3 II) 1
d) I) 1 II) 3

16) An individual human being has 45 chromosomes which type of chromosomal disorder is likely to occur

a) Down Syndrome
b) Turner Syndrome
c) Klinefelter Syndrome
d) None of these

17) Male heterogametic condition is found in

a) Human being
b) Fowl

c) Both A and B

d) None of these

18) In a DNA strand the nucleotides are linked together by

a) Glycocidic bonds

b) Phosphodiester bonds

c) Peptide bonds

d) Hydrogen bonds

19) The human chromosome with the highest and least number of genes in them are respectively

a) Chromosome 21 and y

b) Chromosome 1 and X

c) Chromosome 1 and y

d) Chromosome X and y

20) Which of the following steps in transcription is catalyzed by RNA polymerase

a) Initiation

b) Elongation

c) Termination

d) All of the above

21) Select the incorrectly matched pair

a) A purine -- nitrogenous bases cytosine ,thymine and uracil

b) Recombinant DNA ----- DNA form joining the DNA segments from two different sources

c) rRNA ---- RNA found in ribosomes

d) ATP --- the energy carrying compound in the cell

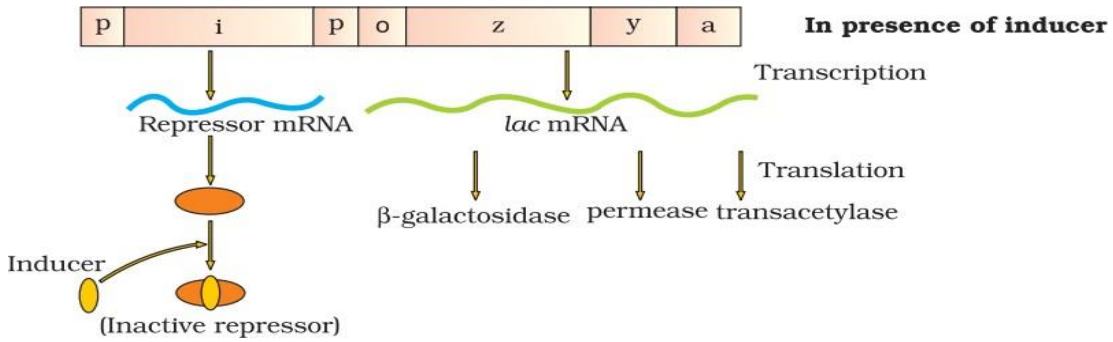
22) What will be the amount of guanine in a DNA if the total amount of adenine and thymine in the DNA is 45 percentage

a) 45%

b) 65 %

c) 27.5 %

d) 22.3%



23) In E coli the lac operon gets switched on when

a) Lactose is present and it binds to the repressor
b) Repressor binds to operator
c) RNA polymerase binds to the operator
d) Lactose is present and it binds to RNA polymerases

24) Which of the following r RNAs act as a structural RNA as well as ribozyme in bacteria

a) 5 S r RNA
b) 18 S rRNA
c) 23 S rRNA
d) 5.8 SrRNA

SECTION B (Assertion and Reason)

Section - B consists of 24 questions (Sl. No.25 to 48). Attempt any 20 questions from this section. The first attempted 20 questions would be evaluated.

Question No. 25 to 28 consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true and R is not the correct explanation of A
c) A is true but R is false
d) A is False but R is true

25) Assertion : Oral contraceptive pills inhibit ovulation and implantation

Reason : Saheli is a once a day pill

26) Assertion : Amniocentesis is legally banned for sex determination

Reason : Amniocentesis was being misused for aborting normal female foetus

27) Assertion : All copulations do not lead to the fertilization and pregnancy

Reason : Fertilization can occur only if the ovum and sperm are transported simultaneously to the ampullary - isthmic junction

28) Assertion : Haplodiploidy occurs in some insects

Reason : Male insects develop parthenogenetically, while females grow from fertilized eggs

29) In human at the end of the first meiotic division the male germ cell differentiate into the

a) Spermatids
b) Spermatozoa
c) Primary spermatocyte
d) Secondary spermatocyte

30) Concentration of which of the following substances will decrease in the maternal blood as itflows from embryo to placenta through the umbilical cord

i) oxygen
ii) amino acid.
iii) carbon dioxide
iv) urea

a) i and ii
b) ii and iv
c) iii and iv
d) i and iv

31) The dialogue between pollen and pistil interaction is mediated by

a) physical contact
b) Chemical components of it
c) Both A and B
d) None of these

32) Which part of ovary in mammals act as an endocrine gland after ovulation

a) Stroma
b) Germinal epithelium
c) Vitelline membrane
d) Graafian follicle

33) Amniocentesis is a technique used to

a) determine errors in amino acid metabolism in embryo
b) pinpoint specific cardiac ailments in embryo
c) determine any hereditary genetic abnormality in embryo
d) all of these

34) The technique called gamete intrafallopian transfer GIFT is recommended for those females

a) Who cannot produce an ovum
b) Who cannot retain the foetus inside uterus
c) Who cannot provide suitable environment for fertilization
d) All of these

35) To produce 400 seeds the number of meiotic division required will be

a) 400.
b) 200
c) 500.
d) 800

36) Which of the following will not result in variation among siblings

a) Mutation
b) Linkage
c) Crossing over
d) Independent assortment of genes

37) Mendel's law of independent assortment holds good for genes situated on the

a) Non -homologous chromosomes
b) Same chromosome

c) Homologous chromosomes

d) Extranuclear genetic element

38) In Antirrhinum RR is phenotypically red flower rr is white and Rr is pink. Select the correct phenotypic ratio in F1 generation when a cross is performed between R R ×. Rr

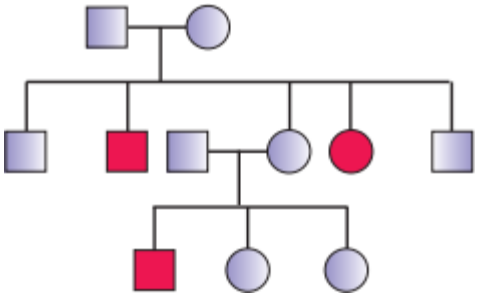
a) 1Red: 2 Pink :1 White

b) 2 Pink. :1 White

c) 2 Red : 2 Pink

d) All pink

39)



What is the pattern of inheritance in the above pedigree chart?

a) Autosomal recessive

b) Autosomal dominant disorder

c) Sex linked recessive disorder

d) Sex linked dominant disorder

40) An independent assortment of traits from different parents occur as a result of events during -----

-------- of meiosis

a) anaphase I

b) Pro phase I

c) metaphase II

d) Pro phase II

41) A cross between two tall plants resulted in offspring having few dwarf plants. What would be the genotypes of both the parents ?

a) TT and Tt
b) Tt and Tt
c) TT and TT
d) Tt and tt

42) If the sequence of of the coding strand of DNA in a nitrogen bases transcription unit is: 5 - A T G A AT G - 3, the sequence of bases in its RNA transcript would be

a) 5 A U G A A U G 3
b) 5 U A C U U A C 3
c) 5 C A U U C A U 3
d) 5 G U A A G U A 3

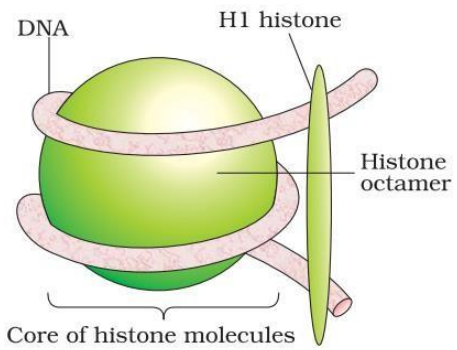
43) If there are 999 bases in an RNA that code for a protein with 333 amino acids and the base at the position 901 is deleted such that the length of the RNA becomes 998 basis ,how many codons will be altered

a) 11
b) 33
c) 333
d) 1

44) Some amino acids are represented by more than one codon. Hence the genetic code is

a) Overlapping
b) Ambiguous
c) Degenerate
d) Generate

45) How many base pair of DNA helix are found in the structure given below



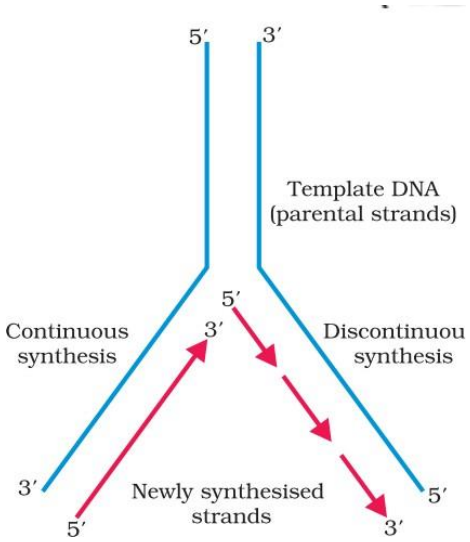
a) 1000

b) 500

c) 200

d) 100

46) In which stage of cell cycle this structure is formed ?



a) G1

b) G2

c) S

d) M

47) RNA splicing refers to

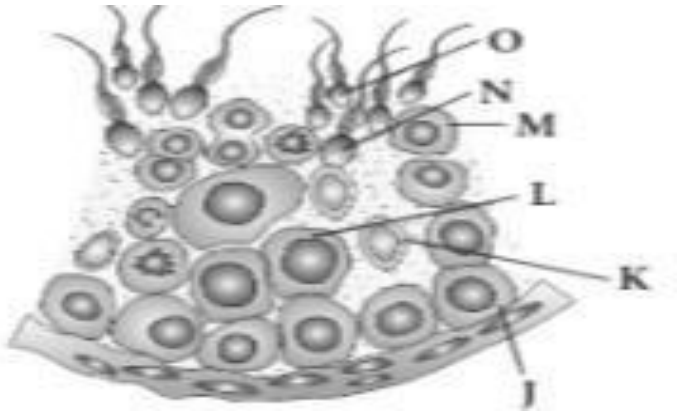
a) removal of both exons and introns
b) removal of exons
c) removal of introns
d) addition of both introns and exons

48) RNA is labile due to the presence of

a) Hydrogen at 2 C in ribose sugar
b) OH at 2 C in ribose sugar
c) OH at 2 C in deoxy ribose sugar
d) None of the these

SECTION-C

Section-C consists of one case followed by 6 questions linked to this case (Q.No.49 to 54). Besides this, 6 more questions are given. Attempt any 10 questions in this section. The first attempted 10 questions would be evaluated.



Each testicular lobules of testis contains 1 to 3 highly coiled seminiferous tubules and the wall of each seminiferous tubule is formed of single layered germinal epithelium. Majority of cells in this epithelium are cuboidal called male germ cells. Study the transverse section of the part of the seminiferous tubule and answer the following questions

49) What is the characteristic of K ?

a) K is spermatogonium which grows into primary spermatocyte
b) K is sertoli cells which provide nutrition to spermatids
c) K is secondary spermatocyte which undergo meiosis II to forms spermatid
d) K is spermatid being converted into sperm

50) Which of the following cell undergo reduction division to form secondary spermatocyte ?

a) J
b) M
c) L
d) K

51) How many among the following have 46 chromosomes J. K. L. M. N. O

a) 2
b) 4
c) 5
d) 3

52) Select an option that correctly identifies the different labels

a) L. primary spermatocyte and N spermatozoa , M secondary spermatocyte
b) J spermatogonium , K sertoli cells , O spermatozoa
c) L primary spermatocyte, M secondary spermatocyte, N spermatozoa
d) J spermatogonium, K primary spermatocyte, N spermatid

53) Which hormone initiates spermatogenesis at puberty ?

a) FSH.
b)ICSH.
c) ABP.
d) GnRH

54) Differentiation of spermatids into spermatozoa is known as

a) Spermiogenesis
b) Spermiation
c) Spermetogenesis
d) None of these

55) A colorblind son born from a normal parents .what would be the genotype of the maternal

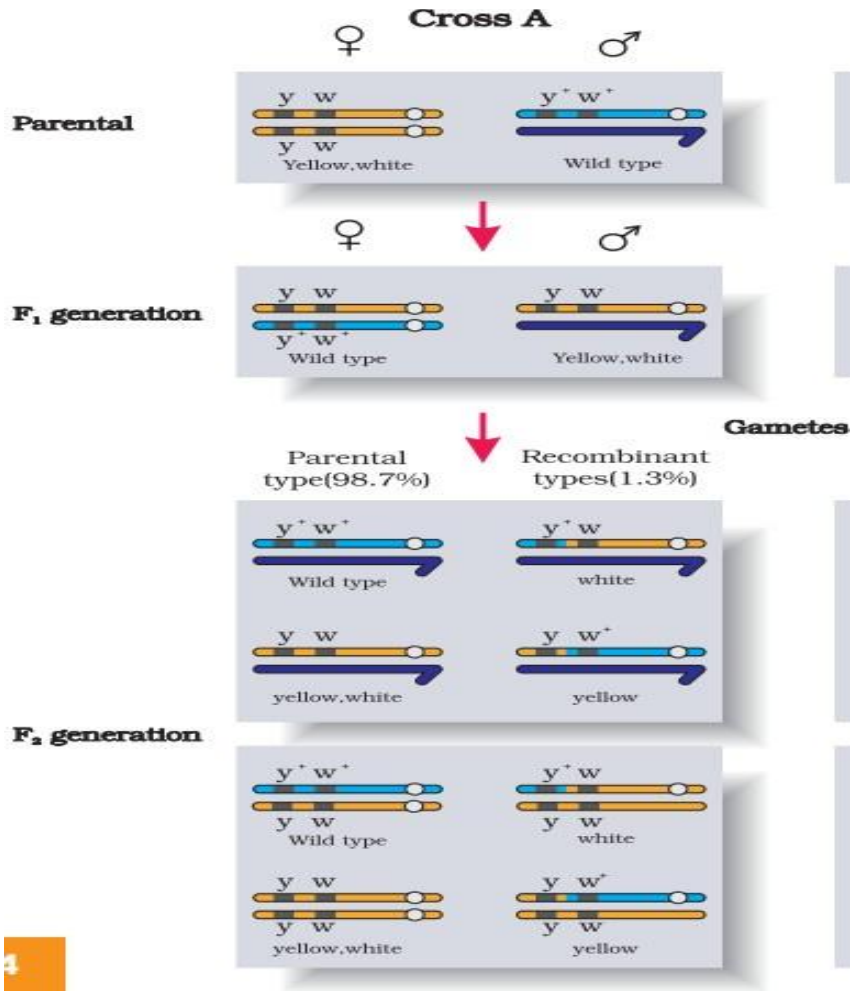
grandfather

a) $x^c y^c$

b) x y

c) $x^c y$

d) None of these



56) Choose the correct option based on the given diagram

i) Genes for eye colour and body colour are linked

ii) Genes for eye colour and body colour show complete linkage

iii) Linked genes remain together and are inherited

a) i and ii

b) ii

c) i and. iii

d) i,ii and iii

57) The gene that controls the ABO blood group system in human beings has three alleles -I^A , I^B and i. A child has blood group O. His father has blood group A and mother has blood group B. Genotypes of other off springs can be:

i) I^BI^B
ii) I^Ai
iii) I^Bi
iv) I^AI^B
v) ii

a) i, ii, iii, v
b) ii, iii ,iv
c) iii, iv, v
d) iv, iii, I

58) Hershey and chase experiment was based on the principle

a) Transformation
b) Translation
c) Transduction
d) Transcription

59) In Lac operon igene code for

a) Repressor
b) Operator
c) Galactose
d) Transacetylase

60) Identify the incorrect statement regarding DNA fingerprint

a) Bulk DNA forms a major peak
b) Satellite DNA is a repetitive DNA
c) Satellite DNA code for protein
d) Mini satellite and microsatellite is a Satellite DNA

****

KENDRIYA VIDYALAYA SANGATHAN

ZONAL INSTITUTE OF EDUCATION AND TRAINING, GWALIOR

SAMPLE QUESTION PAPER - TERM I
SUBJECT: BIOLOGY (SET-2)
CLASS: XII
MARKING SCHEME

All answers carry 0.7 marks each

SECTION A

1) (b) Guides the pollen tube into a synergid

2) (d) pollen grain

3) (b) xenogamy

4) (a)A- scutellum B-coleoptile C- Radicle D- coleorhiza

5) (c) light weight and non- sticky pollen grains, well exposed stamens

6) (b) infundibulum

7) (a) fructose and calcium

8) (b) Placenta as well as fully developed foetus

9) (a) 14th day

10) (d) apomictic seeds show segregation of characters

11) (d) - 196 degree Celsius

12) (d) unknown dominant genotype with recessive parents

13) (a) 25 %

14) (b) when one gene exhibit with multiple traits

15) (c) I)3 II) 1

16) (b) Turner syndrome

17) (a) human being

18) (b) phosphodiester bonds

19) (c) chromosome 1 and y

20) (d) all of the above

21) (a) purine --- nitrogenous bases cytosine thymine and uracil

22) (c) 27.5 percentage

23) (a) lactose is present and it binds to the repressor

24) (c) 23S rRNA

SECTION B

25) (c) A is true and R is false

26) (a). Both A and R is true, R is a correct explanation of A

27) (a) Both A and R is true and R is a correct explanation of A

28) (b) Both A and R is true but R is not the correct explanation of A

29) (d) secondary spermatocyte

30) (a) i and ii

31) (b) chemical components of it

32) (d) graafian follicle

33) (c) determine any hereditary genetic abnormality in embryo

34) (a) who cannot produce an

ovum

35) (c) 500

36) (b) linkage

37) (c) homologous chromosomes

38) (c) 2 red : 2pink

39) (a) autosomal recessive

40) (a). anaphase 1

41) (b) Tt and Tt

42) (a) 5 -A U G A A U G - 3

43) (b) 33

44)(c)degenerate

45) (c) 200

46) (c) S

47) (c) removal of introns

48) (b) OH at 2 C in ribose sugar

SECTION C

49) (b) K is sertoli cells which provide nutrition to spermatids

50) (c) L

51) (a) 2 spermatogonium and primary spermatocytes are diploid

52) (b) J spermatogonium K sertoli cells ,O spermatozoa

53) (d) spermatogenesis starts at puberty due to significant increase in the secretion of GnRH

54) (a) spermiogenesis

55) (c) x^c y

56) (d) i,ii and iii

57) (b) ii ,iii , iv

58) (a) transformation

59) (a) Repressor

60) (c) Satellite DNA code for protein

****

KENDRIYA VIDYALAYA SANGATHAN

ZONAL INSTITUTE OF EDUCATION AND TRAINING, GWALIOR

SAMPLE QUESTION PAPER TERM I

CLASS XII BIOLOGY (SET 3)

Time 90 Minutes **Max. Marks: 35**

General Instructions

1. The question paper contains three sections
2. Section A has 24 questions. Attempt any 20 questions
3. Section B has 24 questions. Attempt any 20 questions
4. Section C has 12 questions. Attempt any 10 questions
5. All questions carry equal marks
6. There is no negative marking

SECTION- A

[Section - A consists of 24 questions. Attempt any 20 questions from this section. **The firstattempted 20 questions would be evaluated**]

1. In which one of the following, both Chasmogamous and Cleistogamous flowers are not observed.

a) oxalis

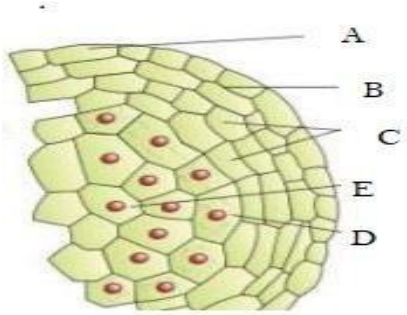
b) commelina

c) viola

d) chrysanthemum

2. Pollen grains are able to withstand extremes of temperature and dessication because their exineis composed of

a) Cutin
b) Suberin
c) Sporopollenin
d) Callose

3. 

The figure shown is a portion of TS of angiosperm anther. Label the parts A to E.

a) A.Epidermis B.Middle layers C.Endothecium D.Tapetum E.Microspore mother cell

b) A.Epidermis B.Endothecium C.Middle layers D.Tapetum E.Microspore mother cell

c) A.Epidermis B.Middle layers C.Endothecium D.Microspore mother cell E.tapetum

d) A.Epidermis B.Endothecium C.tapetum D.Microspore mother cell E.Middle layers.

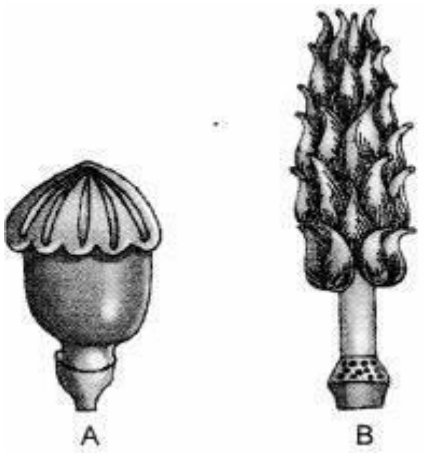
4. Among the following select the one which is not an outbreeding device.

a) Self incompatibility

b) Unisexual flowers

c) Bisexual flowers

d)Non- synchronization of stigma receptivity and pollen release



5. Based on the diagrams A and B given above choose the correct statement

a) Multicarpellary syncarpous ovary and Multicarpellary apocarpous ovary

b) Monocarpellary syncarpous ovary and Monocarpellary apocarpous ovary

c) Bicarpellary Syncarpous ovary and multicarpellary apocarpous ovary

d) Multicarpellary apocarpous ovary and multicarpellary syncarpous ovary

6. The main function of mammalian Corpus luteum is to produce

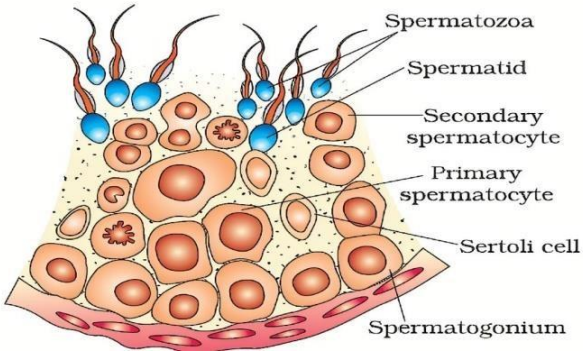
a) Estrogen only

b) Progesterone

c) Human chorionic gonadotropin

d) relaxin

7. write the number of chromosomes in the following cells shown in the figure
1.Sertoli cell 2.Primary spermatocyte 3.Spermatid 4.Spermatogonium



a)1)3n 2)2n 3)n 4)n

b)1)2n 2)n 3)3n 4)n

c)1)2n 2)2n 3)n 4)2n

d)1)2n 2)2n 3)3n 4)2n

8 Which one of the following is the correct matching of the events occurring during menstrual cycle?

a)Ovulation: LH and FSH attain peak level and sharp fall in the secretion of progesterone

b)Proliferative phase: rapid regeneration of myometrium and maturation of graafian follicle

c)Development of corpus luteum: Secretory phase and increased secretion of progesterone

d)Menstruation: break down of myometrium and ovum not fertilized

9. Layers of an ovum from outside to inside is

a) Corona radiata , Zona pellucida and Vitelline membrane

b) Zona pellucida , Corona radiata and Vitelline membrane

c)Vitellinemembrane,Zona pellucida ,Corona radiata

d)Zona pellucida,Vitellinemembrane,Corona radiate

10. Identify the type of pollination and characteristic features of such flowers in the diagram given below

	Type of pollination	Characteristic features
a	Wind	Attractive flower colour
b	Water	Feathery stigma
c	Wind	Pollen grains light and nonsticky
d	Insect	Colourless and odourlessflower.

11 Perisperm differs from endosperm in

a) Its formation by fusion of secondary nucleus with several sperms.

b) being haploid tissue

c) having no reserve food

d) being a diploid tissue

12 How many different types of genetically different gametes will be produced by a heterozygousplant having the genotype AaBbCc?

a) 2

b) 8

c) 6

d) 9

13 A man whose father was colour blind marries a woman who had a colour blind mother and normal father. What percentage of male children of this couple will be colour blind?

a) 50%

b) 75%

c) 25%

d) 0%

14 The reason why haemophilia is more commonly observed in human males than in females isdue to

(a) the disease is due to Y-linked recessive mutation

(b) the disease is due to X-linked recessive mutation

(c) as a huge population of girls die in infancy

(d) the disease is due to X-linked dominant mutation

15 Which one of the following cannot be explained on the basis of Mendel's law of dominance?

a)Alleles do not show any blending and both the characters recover as such in F2 generation

b)Factors occur in pairs

c)The discrete unit controlling a particular character is called a factor

d)Out of one pair of factors one is dominant and other is recessive

16 In XO type of sex determination,

a)females produce two different types of gametes

b)males produce two different types of gametes

c)females produce gametes with Y chromosomes

d)males produce single type of gametes.

17. Match the Syndrome and Chromosomal abnormalities given in column I and II respectively

Column I (Syndromes)	**Column II (Chromosomal abnormalities)**
A. Down's syndrome	1.44+XO
B. Turner's syndrome	2.44+XXY
C. Klinfelter's syndrome	3.45+XY

	A	B	C
a)	1	2	3
b)	3	2	1
c)	2	1	3
d)	3	1	2

18. Which of the following statement is correct regarding DNA and RNA

a) DNA is highly reactive

b) RNA is not catalytic

c) RNA cannot be easily degraded

d) DNA is better genetic material than RNA

19. During transcription, if the nucleotide sequence of the DNA strand that is being transcribed isATACG then the nucleotide sequence in the mRNA would be

(a)TATGC

(b)TCTGG

(c)UAUGC

(d)UATGC

20. In transcription in eukaryotes, heterogenous nuclear RNA (hnRNA) is transcribed by

a) RNA polymerase I

b) RNA polymerase II

c) RNA polymerase III

d) RNA polymerase I and II

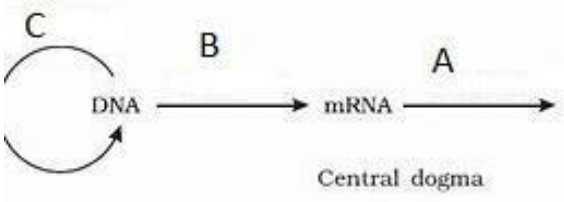
21 Identify A to C in the correct sequence

a) A.Replication B.Transcription C.Translation

b) A.Transcription B.Translation C.Replication

c) A.Translation B.Replication C.Transcription

d) A.Translation B.Transcription C.Replication



22 In Hershey Chase experiment Protein tagging was done by-

a) Radioactive Phosphorus P^{37}

b) Radioactive sulphur S^{34}

c) Radioactive sulphur S^{35}

d)Radioactive Phosphorus P^{32}

23. Identify the process shown in the figure.

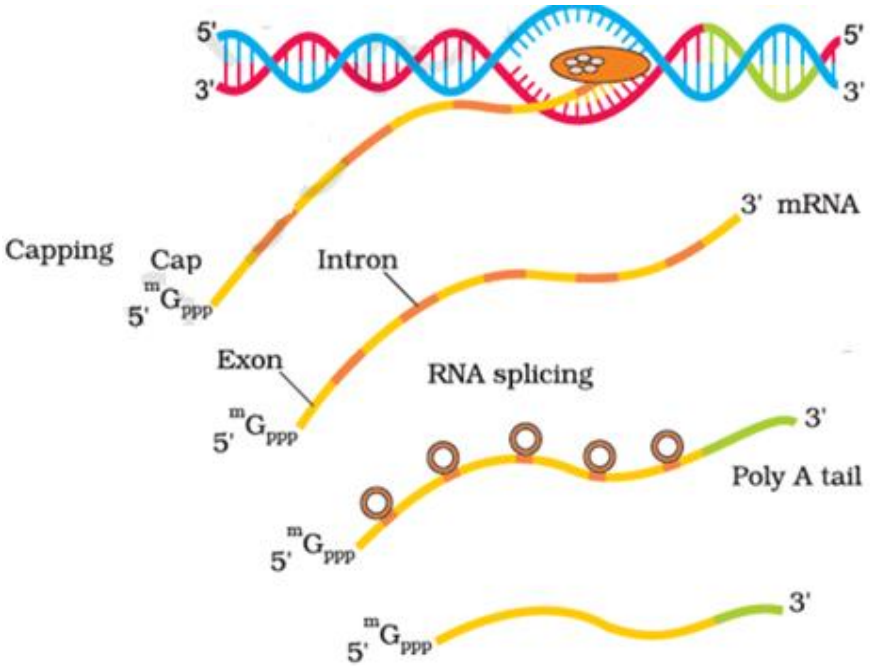
a) Transcription in prokaryotes

b) Transcription in eukaryotes

c) Translation in eukaryotes

d) Translation in prokaryotes

.



24 In humans,

I. non-coding DNA is abundant

II. less than 2% of genome codes for protein

III. the function of more than 50% genes are unknown

IV. Total number of genes is 30000.

Choose the correct option

a) I,II,III and IV

b) I and III

c) I,II and Iv

d) I,II and III

SECTION- B

Section –B consists of 24 questions (SI No.25 to 48).Attempt any 20 questions from thissection. **The first attempted 20 questions would be evaluated.**

Question N.25 to 28 consist of two statements- Assertion (A) and Reason(R). Answer these questions selecting the appropriate option given below

a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation ofassertion (A).

b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanationof assertion (A).

c) Assertion (A) is true but reason (R) is false.

d) Assertion (A)is False but Reason (R)is true

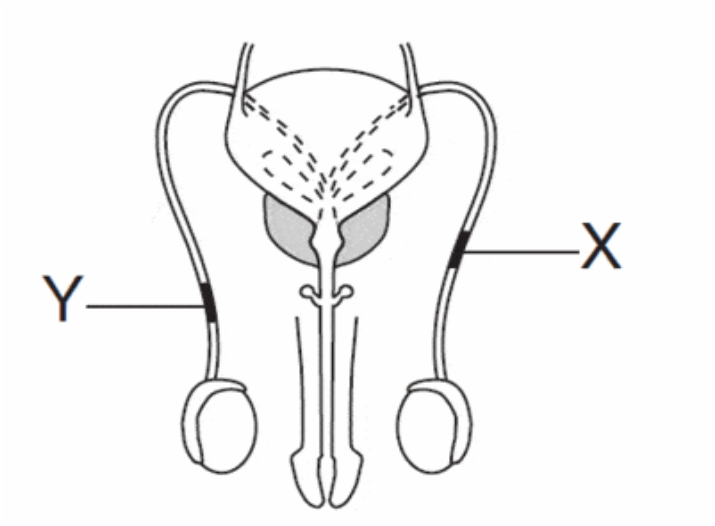
25 Assertion(A):A surgical method of contraception is sterilisation
Reason(R): Sterilisation blocks gamete transport and thereby prevents contraception.

26 Assertion(A):In Zygote Intra Fallopian Transfer, the zygote is transferred to the fallopian tubesof the female
Reason(R):ZIFT is an *in vivo* fertilisation method.

27 Assertion(A):Parturition is induced by neural signal in the maternal pituitary
Reason(R):At the end of gestation period, the maternal pituitary releases oxytocin which causesuterine contractions

28 Assertion (A): Crossing of F1 hybrid with the recessive parent is known as test cross.
Reason (R**)**: Test cross helps to determine the unknown genotype by crossing it with therecessive parent

29 The diagram below represents the human male reproductive system. Which activity would beprevented by blockages at X and Y?



a) transport of urine out of the body

b) passage of testosterone to the female to stimulate egg production

c) movement of sperm out of the body

d) movement of testosterone to the testes to stimulate sperm production

30 In an embryo sac, the cells that degenerate after fertilization are,

a) Synergids and primary endospermcell
b) Synergids and antipodals
c) Antipodals and primary endospermcell
d) Egg and antipodals

31. Which of the following statements is not correct?

(a) Pollen germination and pollen tube growth are regulated by chemical components of pollen interacting with those of the pistil.

b) Some reptiles have also been reported as pollinators in some plant species

c) Pollen grains of many species can germinate on the stigma of a flower, but only one pollen tube of the same species grows into the style

d) Insects that consume pollen or nectar without bringing about pollination arecalled pollen/ nectar robbers.

32 Fertilisation in humans is practically feasible only if

a)The ovum and sperm are transported simultaneously to ampullary-isthmic junction of the cervix

b)The sperms are transported to cervix within 48 hours of release of ovum in uterus

c)The sperms are transported in to vagina just after the release of ovum in fallopian tube.

d)The ovum and sperms are transported simultaneously to ampullary-isthmic junction of the fallopian tube.

33 Which method can be used for women that cannot produce ovum but can provide suitable environment for implantation

(a) IUD

(b) GIFT

(c) IUI

(d) ICSI

34 What is incorrect about Saheli?

a) Developed at CDRI Lucknow

b) steroidal preparation

c) once a week pill

d) high contraceptive value

35 A flower of brinjal plant following the process of sexual reproduction produces 360 viable seeds. How many megaspore mother cells are involved here?

a)180

b)360

c)90

d)720

36 In a cross between pure tall plant with green pod and a pure short plant with yellow pod. How many short plants are produced in F2 generation out of 16?

a)1

b)4

c)9

d)3

37 Rahul observed a plant in his garden. He hypothesized that the stem height exhibited incomplete dominance. To check for this, he created true breeding lines of tall and short plants. He then crossed these and sampled 1000 progeny. Which of the following cases matches in his hypothesis

a) 500 tall plants,250 intermediate plants and 250 small plants

b) 250 tall plants,500 intermediate plants and 250 small plants

c) 250 tall plants,250 intermediate plants and 500 small plants

d) 125 tall plants,750 intermediate plants and 125 small plants

38 Which of the following represent test cross

(a) Ww x ww

(b) ww x ww

(c) Ww x Ww

(d) WW x WW

39 If both parents are carriers for thalassaemia, which is an autosomal recessive disorder, what are the chances of pregnancy resulting in an affected child?

a)50%

b)0%

c)25%

d)No chance

40 Mendel's law of independent assortment does not hold true for the genes that are located closely on

a) same chromosomes

b) Non-homologous chromosomes

c) X-chromosomes

d) autosomes

41 In a cross between AABB × aabb, the ratio of F2 genotypes between AABB, AaBB, Aabb and aabb would be

(a) 9 : 3 : 3 : 1

(b) 2 : 1 : 1 : 2

(c) 1 : 2 : 2 : 1

(d) 7 : 5 : 3 : 1.

42 In DNA 20%bases are adenine. What percentage of bases are Pyrimidines?

a) 20%

b) 40%

c) 50%

d) 60%

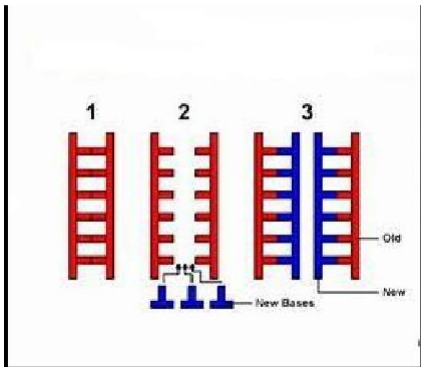
43 During DNA replication, Okazaki fragments are used to elongate

(a) the lagging strand towards replication fork

(b) the leading strand away from replication fork

(c) the lagging strand away from the replication fork

(d) the leading strand towards replication fork.



This image shows that DNA Replication is__

a) Conservative

b) Semi conservative

c) Dispersive

d) Spontaneous

45 Starting with $^{15}N^{15}N$ (heavy) DNA, and after two generations in the ^{14}N medium, *Escherichia coli* cells will contain

a) 25% $^{15}N^{15}N$ DNA, 50% $^{15}N^{14}N$ DNA, and 25% $^{14}N^{14}N$ DNA.

b) 50% $^{15}N^{15}N$ DNA and 50% $^{14}N^{14}N$ DNA.

c) 50% $^{15}N^{15}N$ DNA and 50% $^{15}N^{14}N$ DNA.

d) 50% $^{15}N^{14}N$ DNA and 50% $^{14}N^{14}N$ DNA.

46 Translation is crucial to the process of making proteins. Which statement best describes what takes place during translation?

a) A copy of chromosomal DNA is created

b) Information in mRNA is converted into a sequence of amino acids in a protein

c) An RNA copy of a DNA strand is made.

d) Instructions from DNA in the nucleus are brought to the cytoplasm

47 VNTRs are the key factor in DNA profiling because

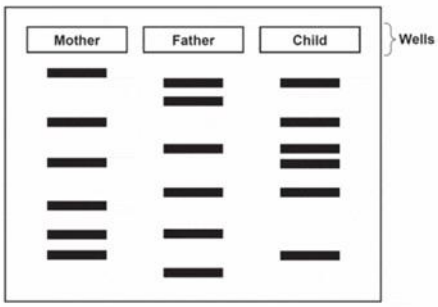
a) the length of the regions having VNTRs is different in each individual

b) the length of the regions having VNTRs is same in each individual

c) they have nucleotide

d) short pieces of nucleotides are same in all persons

48. The parents of a new baby believe that they brought the wrong child to home from the hospital. Gel electrophoresis was performed using DNA samples from theparents and the child. A section of the gel electrophoresis results is shown below. Which conclusion is valid based on the gel electrophoresis results?



a) They have the correct child, because her genetic information is identical to thatof the father.
b) They have the wrong child, because her genetic information does not match that of either parent
c) They have the correct child, because her genetic information came from bothparents.
d) They have the wrong child, because her genetic information matches only that of the mother.

SECTION- C

Section C consists of one case followed by 6 questions linked to this case (Q No.49 to 54).Besides this,6 more questions are given. Attempt any 10 questions in this section. **The first attempted 10 questions would be evaluated.**

PARTURITION

The average duration of human pregnancy is about 9 months which is called the gestation period.
Vigorous contraction of uterus at the end of pregnancy causes expulsion or delivery of the foetus. This process of delivery of the foetus or child birth is called parturition. Parturition is induced by a complex neuroendocrine mechanism. The signals for parturition originate from the full, developed foetus and the placenta which induces mild uterine contractions called foetal ejection reflex. This triggers release of oxytocin from the maternal pituitary. Oxytocin act on the uterine muscle and causes stronger uterine contraction, which in turn stimulates further Secretion of oxytocin. The stimulatory reflex between the uterine contraction and oxytocin secretion continues resulting in stronger and stronger contractions. This leads to expulsion of the baby out of uterus through the birth canal, i.e., parturition. Soon after the infant is delivered, the placenta is also expelled out of the uterus.

49. Parturition is under control of

(a) LH

(b) GnRH

(c) oxytocin

(d) relaxin

50. To induce parturition doctors inject to the pregnant lady.

(a) relaxin

(b)LH

(c) FSH

(d) oxytocin

51. The signals for parturition originate from

(a) Fully developed foetus

(b) placenta

(c) Uterus

(d) both (a) and (b)

52. Foetal ejection reflex refers to

(a) Induction of mild uterine contraction

(b) Release of oxytocin from maternal pituitary

(c) Induction of stronger uterine contraction

(d) None of these

53. Which of the following is the correct sequence of events that occur during parturition?

(1) Foetal ejection reflex

(2) Release of oxytocin

(3) Relaxation of smooth muscles

(4) Vigorous contraction of uterus

(a) 1,2,3,4

(b) 4,1,2,3

(c) 4,1,3,2

(d) 3,4,1,2

54. Gestation period in human beings is about

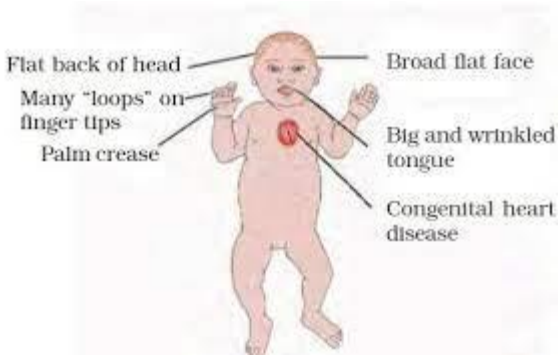
a) 10 week
b) 28 week
c) 32 week
d) 36 week

55. The gene that controls the ABO blood group system in human beings has three alleles I^A I^B i. Match the following genotypes and the respective blood groups?

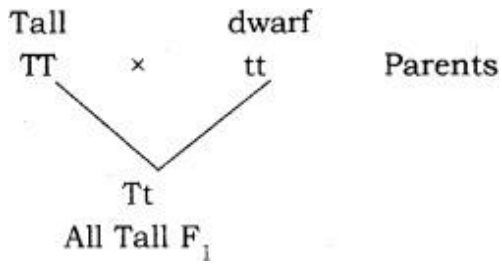
	(I)	(II)	III)	(IV)
a)	O	I^BI^B	I^Bi	I^Ai
b)	AB	I^Ai	I^AI^B	I^Bi
c)	AB	I^BI^B	ii	I^Ai
d)	O	I^AI^A	ii	I^A

56. On the basis of given figure, What is the disorder that the child is suffering from?

a) Child is suffering from Klinfelter's syndrome
b) Child is suffering from Turner's Syndrome
c) Child is suffering from Down's syndrome
d) Child is suffering from Phenylketonuria



57



On the basis of the above cross what will be the phenotypic ratio in F2 generation?

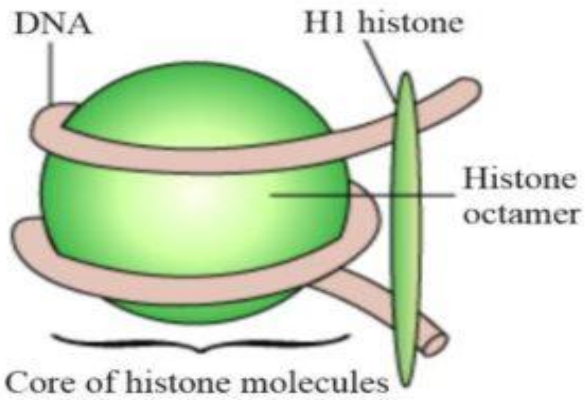
a) 1:2:1

b) 1:1

c) 3:1

d) 9:3:3:1

58. Which structure is shown in this figure?



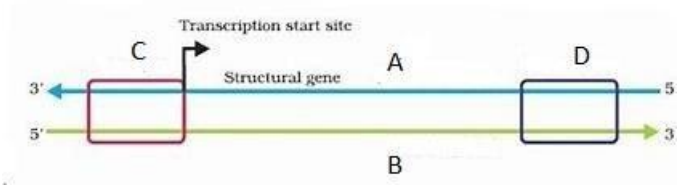
a)Chromatin

b)Chromosomes

c)Nucleolus

d)Nucleosome

59. A transcription unit in DNA is given below.Identify the labelled parts in correct sequence?

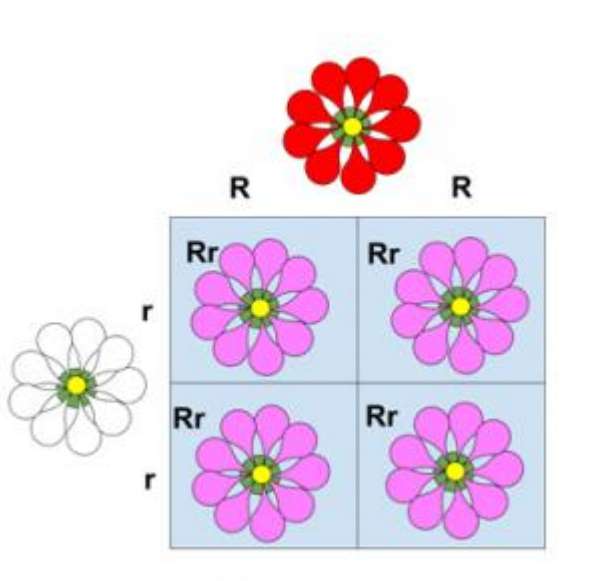


a)A.Promoter B.Template strand C.Terminator D.coding strand

b)A.Template strand B.Coding strand C.Terminator D.Promoter c)A.Template strand B.Terminator C.Promoter D.Coding strand

d)A.Template strand B.Coding strand C.Promoter D.Terminator

60. Which principle of inheritance is shown in this figure?



a) Codominance

b) Dominance

c) Incomplete dominance

d) Multiple allelism

KENDRIYA VIDYALAYA SANGATHAN
ZONAL INSTITUTE OF EDUCATION AND TRAINING, GWALIOR

MARKING SCHEME

SAMPLE PAPER TERM I

CLASS XII BIOLOGY (SET 3)

1. d) chrysanthemum
2. c).Sporopollenin
3. b)Epidermis,Endothecium,Middlelayers,Tapetum,Microspore mother cell
4. c) bisexual flowers
5. a).Multicarpellarysyncarpous ovary and Multicarpellaryapocarpous ovary
6. b).Progesterone
7 c).1) 2n 2) 2n 3) n 4) 2n
8. c) Development of corpus luteum:secretory phase and increased secretion of progesterone
9. a).Corona radiata , Zonapellucida and Vitelline membrane
10. c).Wind, Pollen grains light and non sticky
11d).Being a diploid tissue
12. b).8
13. a)50%
14. b).The disease is due to X-linked recessive mutation
15. a).Alleles do not show any blending and both the characters recover as such in F2generation

16. b).Males produce two different types of gametes

17. d)

A.Down’s syndrome-45+XY
B.Turner’s syndrome-44+X0
C.Klinfelter’s syndrome-44+XXY

18. d).DNA is better genetic material than RNA

19. c).UAUGC

20. b)RNA polymerase II

21. d) .A.TranslationB.TranscriptionC.Replication

22. c).Radioactive S^{35}

23. b) Transcription in eukaryotes

24. a).I,II,III and IV

25. a).Both assertion (A) and reason (R) are true and reason (R) is the correct explanation ofassertion (A).

26. c).Assertion (A) is true but reason (R) is false

27. d).Assertion (A)is False but Reason (R)is true

28. a).Both assertion (A) and reason (R) are true and reason (R) is the correct explanation ofassertion (A).

29. c)movement of sperm out of the body

30. b).Synergids and antipodals
31. c)Pollen grains of many species can germinate on the stigma of a flower, but only onepollen tube of the same species grows into the style.
32. d).The ovum and sperms are transported simultaneously to ampullary-isthmic junction ofthe fallopian tube
33. b)GIFT
34. b)steroidal preparation
35. b)360
36. b)4
37. b).250 tall plants,500 intermediate plants and 250 small plants
38. a).Ww x ww
39. c).25%
40. a).same chromosome
41. c).1:2:2:1
42. c).50%
43. c).Lagging strand away from the replication fork
44. b)Semiconservative
45. d).50% $^{15}N^{14}N$ DNA and 50% $^{14}N^{14}N$ DNA.
46. b).Information in mRNA is converted into a sequence of amino acids in a protein

47. a).The length of the regions having VNTRs is different in each individual
48. c).They have the correct child, because her genetic information came from both parents
49. (c) oxytocin
50. (d) oxytocin
51. (d) both (a) and (b)
52. (a) Induction of mild uterine contraction
53. (a) 1,2,3,4
54. (d) 36 week
55. c)AB, I^BI^B ,ii , I^Ai
56. c) Down’s syndrome
57. c).3:1
58. d).Nucleosome
59. d)Template strand B.Coding strand C.PromoterD.Terminator
60. c) Incomplete dominance