LIONS SCHOOL, MIRZAPUR

PRE-BOARD EXAMINATIONS 2021-22

TERM - 1

CLASS XII Time 90 minute

SUBJECT - BIOLOGY

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

1Q Seminal plasma in human males is rich in

a) Glucose and fructose

b) Fructose and k

c) DNA and testosterone

d) none of these.

2Q In pea seed coloured change from grey to white This is an example of

a) Transformation
b) Induced mutation
c) Pleiotropic mutation
d) Spontaneous mutation

3Q Linkage reduced the frequency of

a) Hybrids b) All parental type C) Homozygous recessive parents

d) heterozygous recessive parents

4Q The crossing over frequency is proportional to

a) Recombinant phenotypic frequency
b) Haploid number of chromosome
c) Diploid number of chromosomes
d) Genotypic frequency

1

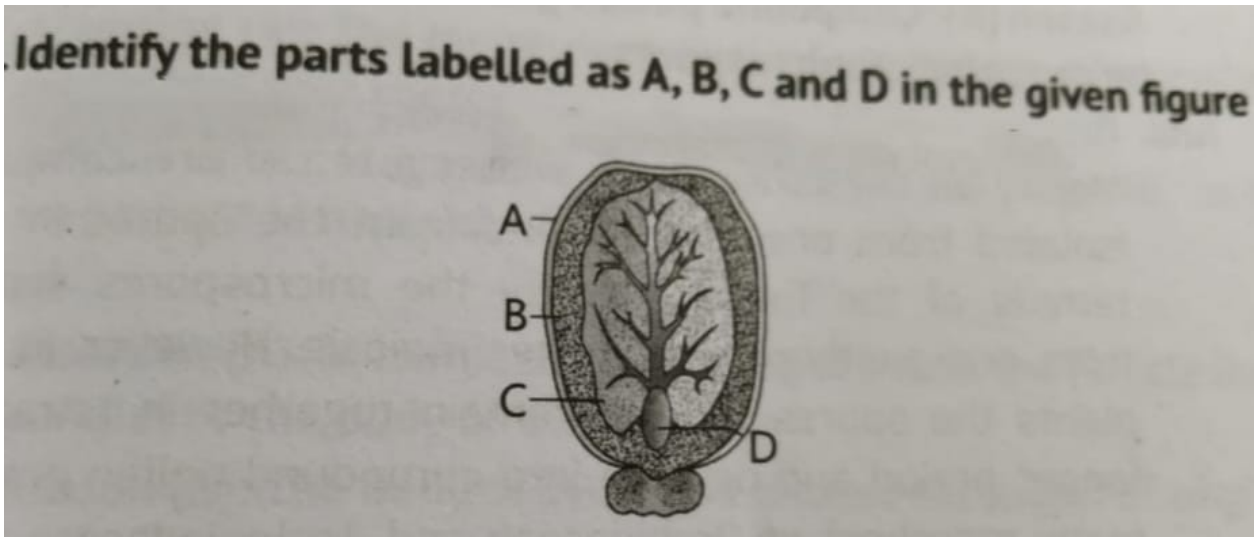
5Q Cu ions released from copper releasing intrauterine device

a) To inhibit ovulation

b) To inhibit fertilisation

c) To inhibit implantation of blastocyst
d) To inhibit gametogenesis

6Q. Maturation of sperm before penetration of ovum is called
a) Spermiation b) Spermatid c) Capacitation d) None of these
7Q Which IUDs increases the phagocyte of sperms within the uterus
a) Non medicated IUDs
b) Cu releasing IUDs
c) Hormonal releasing IUDs
d) Both a and b



8Q

A	B	C	D

a) seed coat, scutellum, epicotyl, hypocotyl
b) seed coat, endosperm, hypocotyl, Epicotyl
c) scutellum, hypocotyl, Epicotyl, seed coat
d) seed coat, endosperm, cotyledon, hypocotyl

9Q During the second stage of parturition
a) amnion and chorion ruptured
b) placenta, umbilical cord and foetal membrane are expelled
c) the umbilical cord is ligature at two places close to the baby
d) the foetal placenta is pulled out from the uterine wall

10Q Mendel's law of independent assortment does not hold true for the gens that are located closely on
a) same chromosome (b)non homologous chromosome(c) X chromosome(d)autosome

Assertion type question

These questions consist of two statements each printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four responses.
A. If both assertion and reason are true and Reason is correct explanation of Assertion.
B. If both Assertion and Reason are true but Reasons are not correct explanation of Assertion.
C. If assertion is true but Reason is false.
D. If both Assertion and Reason are false.
11Q Assertion--The mRNA molecule attaches itself to the ribosome to the ribosome via its 3’ end.

Reason--The mRNA has F- CAPSULAR nucleotide and base of lagging sequence
12Q Assertion- Non allelic genes for red hair and freckles are usually inherited together.

Reason-The genes for red hair and freckle lie close together in same chromosome
13Q Assertion-Nuclear endosperm is formed by subsequent nuclear division without wall formation

Reason- Coconut is example of such endosperm where the endosperm remains nuclear throughout the development of the fruit
14Q. Assertion-In blastula cell masses show morphogenetic movements.
Reason- A three layered blastocyst is formed during blastulation
15QWhich was the last human chromosome to be completely sequenced?
(a) Chromosome 1
(b) Chromosome 11
(c) Chromosome 21
(d) Chromosome X
16Q Which fact is not the basis of periodic absence method of birth control

a) Ovum remains alive for about 1-2 days.
b) Ovulation occurs on about 14^{th} day of menstrual cycle
c)Alteration in uterine endometrium
d)Sperms survive for about 3 days

17Q A diseases caused by an autosomal primary nondisjunction is
a) Klinefelter syndrome
b) Turner’s syndrome
c)Sickle cell anemia
d)Down’s syndrome
Q18 Which of the following IUDs make uterus unsuitable for implantation
a) LNG- 20
b) Multilode375
c) Cu7
d) Lippes loop
19QA polypeptide consist of 14 different amino acid how many bases must be there in the processed mRNA that codes for this polypeptide and how many different types of tRNA are needed for synthesis of this polypeptide?
a)42 bp and 20 tRNA
b)14 bp and 14 tRNA
c)45 bp and 14 tRNA
d)42 bp and42 tRNA
20QWhich forms maximum proportion in chemical composition of pollen
a) Protein
b) Fats
c) Carbohydrates
d) Water
21QThe foetal hormone accumulated in the mother’s blood till they cause
a) an increases progesterone level and prostaglandins
b) a decrease in progesterone and increases in prostaglandin
c) an increases progesterone level and decreases prostaglandins
d) decreases in progesterone level and prostaglandins
22Q Which one is transcribed?
a) only RNA strand
b) single copy of DNA strand
c) highly repetitive DNA strand
d) middle DNA strand

23Q Which of the following modification is necessary for most of eukaryotic RNA processing

a) Addition of modified nucleotide at 5'terminal

b) Cleavage of long precursor of RNA in to smaller one

c) formylation of base at 3'poly(A) tail

d) alteration of incorrect base through proof reading

Select the correct answer using code given below

a)1 and2

b)2and 3

c)1 and4

d)2 and4

24Q Single functional megaspore which develops into embryo sac is

a) first at micropylar end

b) Second from micropylar end

c) First at chalaza end

d) Second from chalaza end

SECTION B

Section - B consists of 24 questions (Sl. No.25 to 48). Attempt any 20 questions from this section.

25QThe constant feature of embryo sac is

a)egg

b)Synergids

c)antipodal

d)Polar nuclei

26Q Cells of tapetum are characterize by

a)Free cell formation

b)Meiotic division

c)Amitosis and endomitosis

d)Mitosis and endomitosis

27Q Which of the following is not true for allogamy

a)Self sterility

b)Dichogamy

c)Hetrogamy

d)None of these

28Q In the fully organized polygonum type of embryo sac ,what is the ratio of n, 2n, and 3n nuclei

a)3:1:3

b)6:0:1
c)6:1:0
d)3:2:3

Q. 29 Experimental verification of chromosomal theory of inheritance was given by :-

a) John Mendal
b) Hugo de Veries
c) T.H. Morgan

30Q. **The process of RNA splicing shows the dominance of**

a) RNA world
b) DNA world
c)Microbial world
d)protein world

31Q The first step in the biosynthesis of polypeptide is catalysed by:

a) Terminal transferase
b) Peptidyl transferase
c) Initiation factors (IFs)
d) Aminoacyl-t-RNA synthesis

32Q Methyl guanosine triphosphate is associated with:

a) Tailing
b) Capping
c) Tautomerism
d) Point mutation

33Q What is number of chromosome of the aleurone cells of plant with 42 chromosome in the root tip cells?

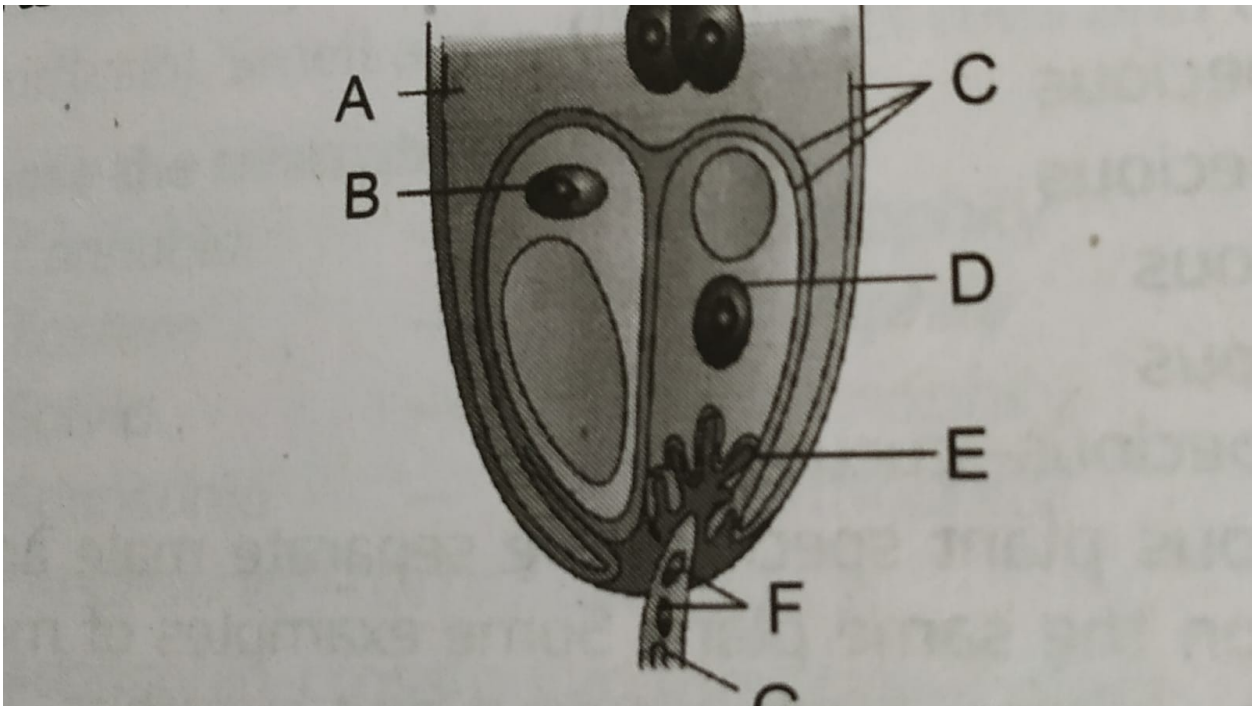
a)63 b) 84 c) 21 d) 42

34Q In human females the ovarian cycle begins when the

a) The levels of estrogen reach their maximum
b) Level of progesterone drops precipitously
c) Hypothalamus increases its release of FSH and LH
d) Hypothalamus stimulates the anterior pituitary to increases its out put of FSH and LH

35Q Refer to the given figure of egg apparatus showing entry of pollen tube into a synergid. Identify A, B, C and E

2



a) Central cell, egg nucleus, Plasma membaran, synergrid
b) Central cell synergrids, Plasma membrane, egg nucleus,
c) Plasma membrane, egg nucleus, Central cell synergrids
d) Plasma membrane Central cell synergrids

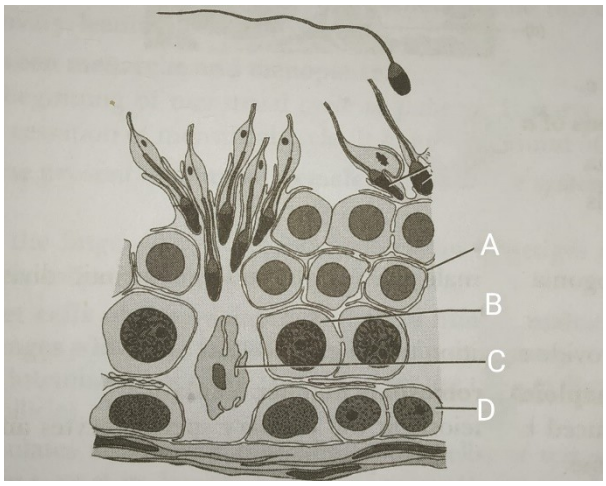
36Q In the fully organized polygonum type of embryo sac ,What is the ratio of n, 2n, and 3n nuclei

a)3:1:3
b()6:0:1
c)6:1:0
d)3:2:3

37QWhich statement is wrong
a) Pollen grains remain viable for several months because their outer covering is made of sporopollenin
b) No enzyme can degrade sporopollenin
c)Pollen grains are well represented in fossil strata due to sporopollenin
d)Pollen wall has cavities containing proteins
38Q Cumulus cover
a) ovum b) ovary c) embryo d) all of above
39Q.Study the figure given and identify a,b,c and d

a) spermatogonia, secondary spermatocyte, primary spermatocyte and spermatid
b) spermatogonia, primary spermatocyte, spermatid and secondary spermatocyte,
c) spermatid, secondary spermatocyte, Sertoli cell and spermatogonia
d) secondary spermatocyte, primary spermatocyte, Sertoli cell and spermatogonia

40QAcrosome is a type of



a) ribosome b) lysosome c) basal body d) microtubule
41QIf mammalian ovum fails to get fertilized, which one of the following is unlikely
a) corpus luteum will disintegrate
b) progesterone secretion rapidly decline
c)estrogen secretion rapidly increases
d)primary follicles start developing
42QWhich of the following hormone initiate parturition

a)ACTH,hCG,oxytocin
b)ACTH,corticosteroid,oxytocin
c) corticosteroid,oxytocin,prostaglandin
d)ACTH, progestron,hCG
43QDuring oogenesis in mammals the second meiotic division occurs
a)before ovulation
b)after fertilisation
c)in the formation of primary oocyte
d)in the secondary oocyte
44Q In the human female menstruation can be differed by the administration of
a)LH only
b)FSH only
c)combination of FSH and LH
d)combination of estrogen and progesterone
45Q DNA polymerase III catalyzes:
a) repair of DNA
b) replication of DNA
c) translation of m-RNA
d) joining of ends of DNA
46QEmergency contraceptive are effective if used within
a)72 hours of coitus
b)72 hours of ovulation
c)72 hours menstruation
d)72 hours of implantation
47Qcorrect sequins in cleavage,zygote,fertilisation,gastrula,blastula
a)3,1,2,5,4 b)3,2,1,4,5 c)3,2,1,5,4d)1,3,2,4,5
48Q DNA replication starts in the 5'→3' direction because:
a) DNA polymerase I performs editing function
b) DNA polymerase I is responsible for polymerization
c) DNA polymerase II can link only in 5'→3' direction
d) DNA polymerase III can polymerize the nucleotides in the 5'→3' direction

Section D

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.

Case study

ABO blood group in human being are controlled by the gene I. The genes have three alleles. If the two persons with AB blood group marry and have sufficient large number of children their children could be classified as A blood group, AB blood group, B blood group in 1.2.1 ratio.

49Q Out of three alleles of gene I the sugar polymer on the plasma membrane of RBC controlled by how many alleles?

a) All three
b) one
c)Two
d)Zero

50Q How many genotypes can occur in ABO blood group

a) six
b) two
c)three
d)four

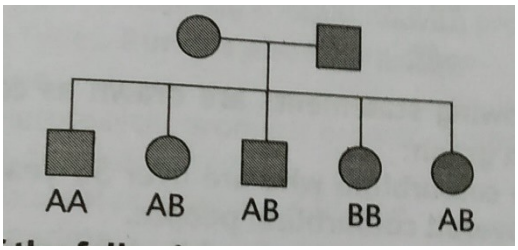
51Q ABO blood group in human being cites the example of

a) incomplete dominance
b) Multiple allelism
c) Co-dominance
d) Both b and c

52Q If a man of A blood group marries a women of AB blood group which type of progeny indicates that man is heterozygous?

a) O
b) B
c) A
d) AB

53Q Given pedigree chart depict the inheritance of AB blood group in family



Which of the following conclusion drawn are correct?

I Parent are heterozygous.

II Parent are heterozygous as mother is AA and father is BB.

III Parents are both heterozygous and homozygous.

a) I and III
b) I and II
c) Only III
d) Only I

54Q A child blood group is O the parent blood group can not be

a) A and O
b) A and B
c) B and O
d) AB and O

55Q The Okazaki fragments in DNA chain growth:

a) Result in transcription
b) Prove semi-conservative nature of DNA replication
c) Polymerize in the 3'→5' direction and forms replication fork
d) Polymerize in the 5'→3' direction and explain 3'→5' DNA replication

56Q Which one of the following codons codes for the same information as UGC

a) UGU
b) UGA
c) UAG
d) UGG

57Q Which of the following amino acids has only one codon

a) Valine
b) Tyrosine
c) Isoleucine
d) Tryptophan

58Q Which statement about translation is not true
a) There are both start and stop codons
b) It is RNA directed polypeptide synthesis
c) The same genetic code operates in all organism
d) An m-RNA molecule can be translated by only one ribosome at a time

59Q During translation initiation in prokaryotes, a GTP molecule is needed in:
a) Formation of formyl-met-t-RNA
b) Binding of 30S submit of ribosome with m-RNA
c) Association of 30S-m-RNA with formyl-met-t-RNA
d) Association of 50S subunit of ribosome with initiation complex

60Q In India Family -Planning was stared in
a)1947 b) 1950 c) 1951 d) 1953