doubtnut
India's Number 1 Education App

BIOLOGY

BOOKS - SRIJAN BIOLOGY (ENGLISH)

SAMPLE PAPER - 5 (BIOLOGY)

Questions

1. There are various types of reproduction. The type of reproduction adopted by an organism depends upon -

A. The habitat and morphology of the organism

B. Morphology of the organism

C. Morphology and physiology of the organism

D. The organism's habitat, physiology and genetic makeup

Answer: D

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2. Double fertilisation involve -

A. Fertilisation of the egg by two male gametes

B. Fertilisation of two eggs in the same embryo sac by two sperms brought by one pollen tube

C. Fertilisation of the egg and the central cell by two sperms brought by different pollen tubes

D. Fertilisation of egg and central cell by two sperms brought by the same pollen tube

Answer: D

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3. Common test to find genotype of hybrid is by -

A. Studying sexual behaviour of F_1 progeny

B. Crossing F_2 individuals with recessive parents

C. Crossing one F_2 progeny with male parent

D. Crossing one F_2 progeny with female parent

Answer: B

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4. Morula resembles a -

A. Mulberry fruit

B. Football

C. Hollow ball

D. None of these

Answer: A

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5. Which of the following was likely to have been absent in a free molecule state, in the primitive atmosphere of the earth?

A. Carbon

B. Oxygen

C. Hydrocarbon

D. Nitrogen

Answer: C

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6. Genetic drift operates only in -

A. Island population

B. Smaller population

C. Larger population

D. Mendelian population

Answer: B

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7. Mycorrhiza does not help the host plant in -

A. Enhancing its phosphorus uptake capacity

B. Increasing its tolerance to drought

C. Enhancing its resistance to root pathogens

D. Increasing its resistance to insect

Answer: C

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8. Which of the following statement support the view that elaborate sexual reproductive process appeared much later in the organic evolution?

(i) Lower group of organisms have simpler body design

(ii) Asexual reproduction is common in lower groups of organisms

(iii) Asexual reproduction is common in higher groups of organisms

(iv) The high incidence of sexual reproduction in angiosperms and vertebrates

Choose the correct answer from the options given below

A. (i) and (ii)

B. (i) and (iii)

C. (ii) and (iv)

D. (ii) and (iii)

Answer: C

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9. Study of pollen grains is called -

A. Ethnology

B. Palynology

C. Paleobotany

D. Co-taxonomy

Answer: B

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10. Darwin's finches are good example of -

A. Connecting link

B. Adaptive radiation

C. Convergent evolution

D. Industrial melanism

Answer: B

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11. Amniocentesis is a technique used to-

A. Determine

B. Pinpoint specific cardiac ailments in embryo

C. Determine any hereditary/genetic abnormality in embryo

D. All of these

Answer: C

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12. Signals for parturition originate from-

A. Both placenta as well as fully developed foetus

B. Placenta only

C. Oxytocin released from maternal pituitary

D. Fully developed foetus only

Answer: A

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13. Cause of speciation is -

A. Random mating

B. Hybridisation

C. Geographic Isolation

D. Migration

Answer: C

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14. In the Lac operon system, β-galactosidase is encoded by-

A. a-gene

B. i-gene

C. y-gene

D. 2-gene

Answer: D

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15. Seedless banana is -

A. Parthenocarpic fruit

B. Multiple fruit

C. Drupe fruit

D. Tree fruit

Answer: A

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16. 1st polar body is formed at which stage of oogenesis -

A. 1^{st} meiosis

B. 2^{nd} mitosis

C. 1^{st} mitosis

D. Differentiation

Answer: A

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17. The term genetics was proposed by -

A. Mendel

B. Bateson

C. Morgan

D. Johannsen

Answer: B

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18. The largest unit in which gene flow is possible is-

A. Organism

B. Population

C. Species

D. Genes

Answer: B

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19. The test tube baby programme employs which one of the following technique ?

A. Intra Cytoplasmic Sperm Injection (ICSI)

B. Intra Uterine Insemination (IUI)

C. Gamete Intra Fallopian Transfer (GIFT)

D. Zygote Intra Fallopian Transfer (ZIFT)

Answer: D

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20. Lactic Acid is formed by the process of -

A. Fermentation

B. Glycolysis

C. HMP pathway

D. None of these

Answer: A

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21. Eyelids in human embryo separate in:

A. 14 weeks

B. 16 weeks

C. 24 weeks

D. 40 weeks

Answer: C

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22. A monohybrid for qualitative trait is crossed with homozygous recessive individual of its type, the phenotype ratio is -

A. $1:2:1$

B. $3:1$

C. $1:1$

D. $9:7$

Answer: C

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23. Embryo sac is also called-

A. microspore

B. megaspore

C. megagametophyte

D. microgametophyte

Answer: C

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24. Theory of chemical origin of life was given by-

A. Miller and Fox

B. Oparin and Haldane

C. Miller and Watson

D. Watson and Melvin

Answer: B

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25. Birbal Sahni Institute of Palaeobotany is located at ___.

A. Delhi

B. Lucknow

C. Dehradun

D. Kolkata

Answer: B

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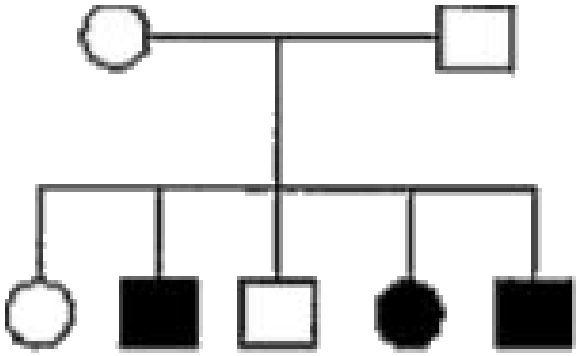
26. In the given pedigree chart, the trait shown is_____.



A. Autosomal dominant

B. Autosomal recessive

C. X-linked

D. Y - linked

Answer: B

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27. Which of the following is maintained for optimum production of Vinegar?

A. Anaerobic condition

B. Temperature of $65^{\circ} C$

C. Aerobic condition

D. Microaerophilic condition

Answer: A

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28. The further growth of embryo takes place when the_____ has been formed.

A. pollen

B. ovule

C. zygote

D. pistil

Answer: C

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29. The chromosomal theory of inheritance was proposed by_____ in 1902.

A. Mendel

B. Sutton and Boveri

C. Bateson and Punnett

D. Watson and Crick

Answer: B

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30. Endosperm cell of an angiosperm has 36 chromosomes. The number of chromosomes in the gametes would be _____.

A. 11

B. 12

C. 8

D. 9

Answer: B

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31. _____is the exchange of chromosome segments between the non-sister chromatids.

A. Crossing over

B. Recombination

C. Both (a) and (b)

D. Linkage

Answer: C

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32. ____among the following is triploid.

A. Megaspore

B. Embryo

C. Endosperm

D. Microspore

Answer: C

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33. _____is the graphic representation of a linkage group.

A. Gene map

B. Chromosome map

C. Pedigree chart

D. Karyotype

Answer: B

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34. Sporopollenin occurs in_____.

A. female gametophyte

B. male gametophyte

C. vegetative cells of pollen grain

D. exine of pollen wall

Answer: D

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35. In spermatogenesis, reduction division of chromosomes occur during conversion of:

A. Spermatognoia is primary spermatocytes

B. Primary spermatocytes to secondary spermatocyte

C. Secondary spermatocytes to spermatides

D. Spermatids to sperms

Answer: B

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36. Which of the following is the component of oral pills ?

A. Progesterone

B. Oxytocin

C. Relaxin

D. None of these

Answer: A

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37. Match the structures of male reproductive system given in column I with their features given in column II and select the correct match from the options given below.

	Column I (Structures)		Column II (Features)
A	Rete testis	(i)	Facilitates insemination
B	Leydig cells	(ii)	Meiosis and sperm formation
C	Seminiferous tubules	(iii)	Connects seminiferous tubules to vasa efferentia
D	Penis	(iv)	Secrete androgens

A. A-(ii), B-(i), C-(iii), D-(iv)

B. A-(iii), B-(iv), C-(ii), D-(i)

C. A-(iii), B-(i), C-(ii), D-(iv)

D. A-(ii), B-(iv), C-(iii), D-(i)

Answer: B

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38. Match column I with column II and select the correct option from the given codes.

	Column I		Column II
A	Integuments	(i)	A mass of cells
B	Chalaza	(ii)	Stalk of ovule
C	Funicle	(iii)	Protective envelopes
D	Nucellus	(iv)	Basal part of the ovule

A. A-(i), B-(ii), C-(i), D (iv)

B. A-(iv), B-(iii), C-(ii), D-(i)

C. A-(i), B-(ii), C (iv), D-(i)

D. A-(iii), B-(iv), C-(ii), D-(i)

Answer: D

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39. Find the odd one out.

A. Clitoris

B. Mons pubis

C. Lactiferous duct

D. Labia majora

Answer: C

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40. Identify the odd one from the following:

A. Labia minora

B. Fimbriae

C. Infundibulum

D. Isthmus

Answer: A

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41. Assertion : In a microsporangium, the tapetal cells possess little cytoplasm and generally have a single

prominent nucleus.

Reason : During microsporogenesis, the microspore mother cells undergo mitotic divisions to produce haploid microspore tetrads.

A. Both assertion and reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion.

C. Assertion is true, but reason is false.

D. Both assertion and reason are false.

Answer: D

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42. Assertion : During pregnancy, development of foetus occurs in stages.

Reason : In second month of pregnancy, limbs, most of the organs and external genitalia are formed.

A. Both assertion and reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion.

C. Assertion is true, but reason is false.

D. Both assertion and reason are false.

Answer: C

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43. Assertion : MTPs can be performed by unqualified quacks.

Reason : MTPs are not considered relatively safe during the second trimester.

A. Both assertion and reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false.

D. Both assertion and reason are false.

Answer: D

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44. Assertion : Behaviour of chromosome is parallel to gene.

Reason Genes are located on the chromosome.

A. Both assertion and reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false.

D. Both assertion and reason are false.

Answer: A

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45. Assertion : Emasculation is the first step of artificial hybridisation in unisexual flowers.

Reason : It does not involve the dusting of stigma of desired female parent with desired pollen grains.

A. Both assertion and reason are true and reason is the correct explanation of assertion.

B. Both assertion and reason are true, but reason is not the correct explanation of assertion.

C. Assertion is true, but reason is false.

D. Both assertion and reason are false.

Answer: D

View Text Solution

46. Read the following and answer the following questions:

India was amongst the first countries in the world to initiate action plans and programmes at a national level to attain total reproductive health as a social goal. These programmes called 'family planning' were initiated in 1951 and were periodically assessed over the past decades. Improved programmes covering wider reproduction related areas are currently in operation under the popular name 'Reproductive and Child Health Care (RCH) programmes. Creating awareness among people about various reproduction related aspects and providing facilities and support for building up a reproductively healthy society are the major tasks under these programmes. With the help of audio-visual and the print-media governmental and non-governmental agencies have taken various steps to create awareness among the

people about reproduction related aspects. Introduction of sex education in schools should also be encouraged to provide right information to the young so as to discourage children from believing in myths and having misconceptions about sex-related aspects. Proper information about reproductive organs, adolescence and related changes, safe and hygienic sexual practices, sexually transmitted diseases (STD), AIDS, etc., would help people, especially those in the adolescent age group to lead a reproductively healthy life.

Which among the following is the 1st country in the world to initiate action plan to attain total reproductive health ?

A. Indonesia

B. Britain

C. India

D. USA

Answer: C

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In which year was 'Family Planning progamme launched?

A. 1905

B. 1925

C. 1947

D. 1951

Answer: D

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Under reproductive health programme, what is the full form of RCH?

A. Regeneration Child Health Care Centre

B. Reproduction Children Health Care

C. Rehabilitation Centre for Child Care

D. Reproductive and Child Health Care

Answer: D

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reproductive organs, adolescence and related changes, safe and hygienic sexual practices, sexually transmitted diseases (STD), AIDS, etc., would help people, especially those in the adolescent age group to lead a reproductively healthy life.

What is full form of STDs ?

A. Sexually Treated Diseases

B. Sexually Transmitted Diseases

C. Sexually Transformation of Diseases

D. Sexual Transmission of Diseases

Answer: B

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Which of the following causes AIDS?

A. Bacillus bacteria

B. HIV

C. Cyanobacteria

D. Detrimental fungus

Answer: B

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51. DNA fingerprinting is a technique of determining nucleotide sequences of certain areas of DNA which are unique to each individual. Each person has a unique DNA fingerprint. Each fingerprint is the same for every cell, tissue and organ of a person. DNA fingerprinting is the basis of paternity testing in case of disputes.

The technique developed to identify a person with the help of DNA restriction analysis is known as

A. DNA profiling

B. DNA fingerprinting

C. RFLP

D. both (a) and (b)

Answer: D

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52. DNA fingerprinting is a technique of determining nucleotide sequences of certain areas of DNA which are unique to each individual. Each person has a unique DNA fingerprint. Each fingerprint is the same for every cell, tissue and organ of a person. DNA fingerprinting is the basis of paternity testing in case of disputes.

For DNA fingerprinting, DNA is obtained from

A. blood

B. hair root cells

C. semen

D. all of these

Answer: D

View Text Solution

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During DNA fingerprinting, the radioactive probes

A. hybridise with DNA sample to form double stranded structure

B. degrade and DNA

C. create positive charge on DNA

D. cut the DNA sample at various sites

Answer: A

View Text Solution

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paternity testing in case of disputes.

In India, DNA fingerprinting technique was developed by

A. Dr. Lalji Singh

B. Alec Jeffreys

C. Dr. Khurana

D. None of these

Answer: B

View Text Solution

55. DNA fingerprinting is a technique of determining nucleotide sequences of certain areas of DNA which are unique to each individual. Each person has a unique DNA fingerprint. Each fingerprint is the same for every cell, tissue

and organ of a person. DNA fingerprinting is the basis of paternity testing in case of disputes.

Which of the following is true about DNA fingerprinting?

A. VNTR is used to probe

B. DNA samples are loaded on agarose gel electrophoresis

C. It is based on identification of nucleotide sequence present on the DNA molecule

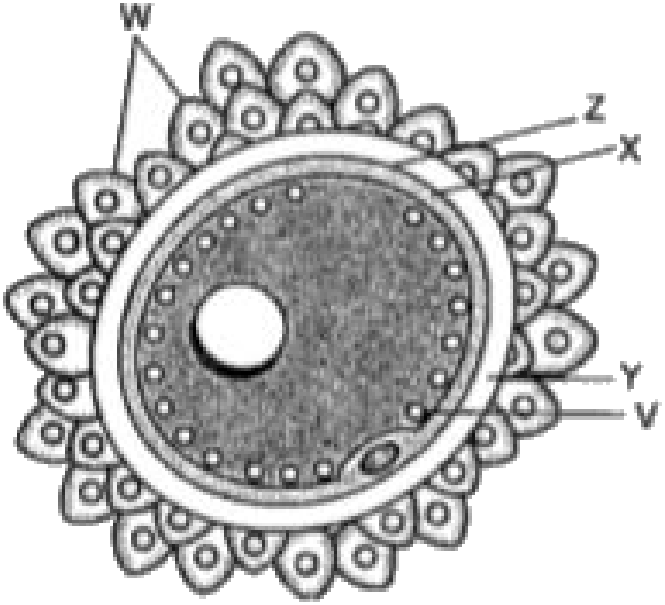
D. All of these

Answer: D

View Text Solution

56. The mature ovum or a female gamete is spherical in shape. The human ovum is almost free of yolk and is said to

be alecithal. Human ovum loses its ability to be fertilised about 24 hours after ovulation. Refer to the given structure of ovum and answer the following questions.



Thick cellular layer formed of radially elongated follicular cells is:

A. zona pellucida

B. plasma membrane

C. perivitelline membrane

D. corona radiata

Answer: D

View Text Solution

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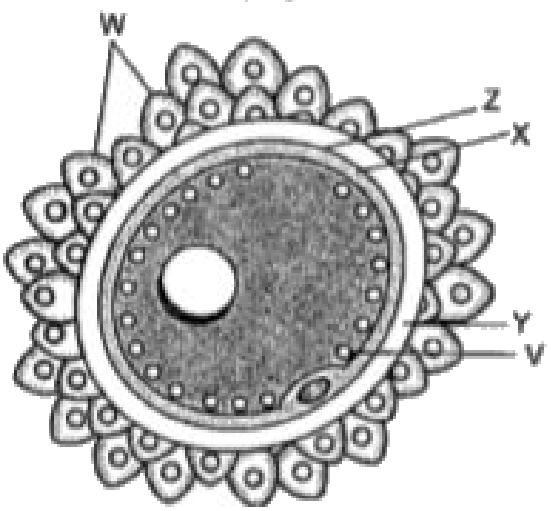

In humans, at which stage does ovum get released from ovary?

A. Secondary oocyte

B. Oogonium

C. Primary oocyte

D. First polar body

Answer: A

View Text Solution

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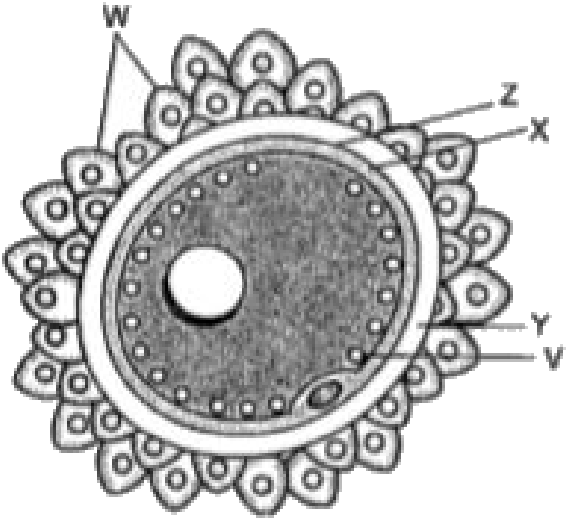

Cytoplasm of an ovum is enveloped by _____.

A. zona pellucida

B. corona radiata

C. cell membrane

D. perivitelline space.

Answer: C

View Text Solution

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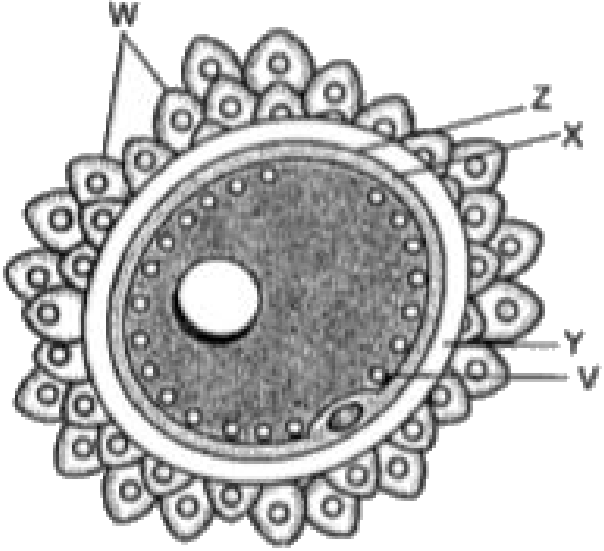


Select the correct option

A. V Cytoplasm W Zona pellucid X Plasma membrane

B. V Cortical granules W Corona radiata X Zona pellucida

C. V Cortical granules W Plasma membrane X Corona radiata

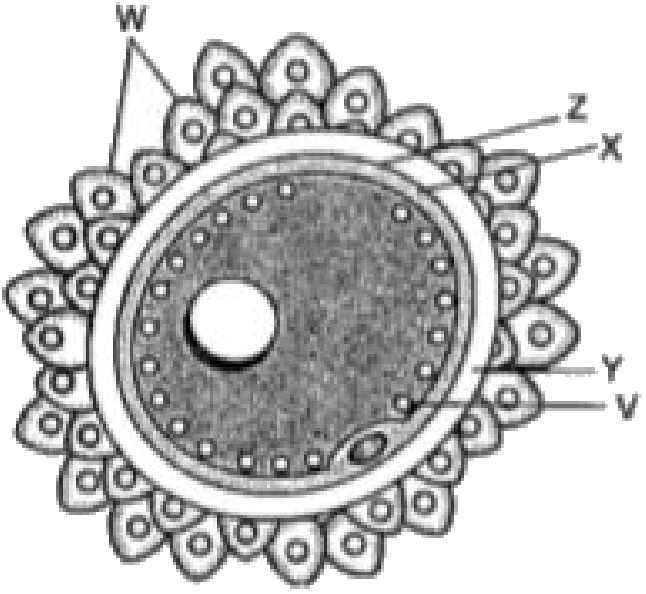
D. V Cytoplasm W Corona radiata X Zona pellucida

Answer: B

View Text Solution

View Text Solution

60. The mature ovum or a female gamete is spherical in shape. The human ovum is almost free of yolk and is said to be alecithal. Human ovum loses its ability to be fertilised about 24 hours after ovulation. Refer to the given structure of ovum and answer the following questions.



Which of the following is not a characteristic of an ovum?

A. Nucleus of an ovum has prominent nucleolus.

B. Only one ovum formed from one oogonium.

C. It lacks centrioles.

D. It has very small amount of coplasm.

Answer: D

View Text Solution

61. Read the following and answer the following questions:

The genetic code may be defined as the exact sequence of DNA nucleotides read as three letter words or codons, that determines the sequence of amino acids in protein synthesis. In other words, the genetic code is the set of rules by which information encoded in genetic material (DNA or RNA sequences) is translated into proteins (amino acid

sequences) by living cells. Genetic code is the full set of relationships between codons and amino acids (or stop signals). It is basically the way through which the A, C G and T are strung together.

Which of the following is not a feature of the genetic code?

A. Triplet

B. Degenerate

C. Non-overlapping

D. Ambiguous

Answer: D

View Text Solution

62. Read the following and answer the following questions:

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Which of the following is not a termination codon?

A. USA

B. UAG

C. UAA

D. UAC

Answer: B

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signals). It is basically the way through which the A, C G and T are strung together.

The codon is a_____.

A. Singlet

B. Duplet

C. Triplet

D. Quadruplet

Answer: C

View Text Solution

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The first amino acid added by the tRNA is added to the anticodon_____.

A. AUG

B. UAC

C. ACG

D. UGC

Answer: B

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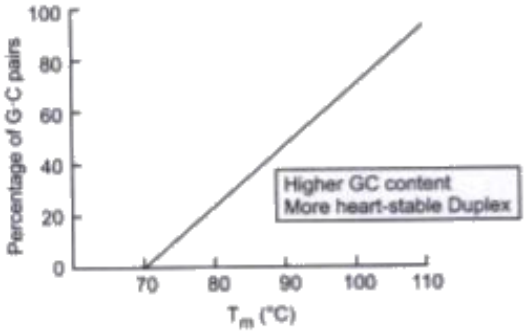
Which of the following statement can be concluded from the

graph below?



A. GC pairings are more stable because they have 3 hydrogen bonds, so they require a higher temperature to break

B. GC pairings are more stable because they have 2 hydrogen bonds, so they require a higher temperature to break.

C. AT pairings are more stable because they have 3 hydrogen bonds, so they require a higher temperature

to break

D. AT pairings are more stable because they have 2 hydrogen bonds, so they require a higher temperature to break.

Answer: A

View Text Solution

66. Read the following and answer the questions that follow:

Chromosomal abnormalities, alterations and aberrations are at the root of many inherited diseases and traits. Chromosomal abnormalities often give rise to birth defects and congenital conditions that may develop during an individual's lifetime. Examining the karyotype of

chromosomes (karyotyping) in a sample of cells can allow detection of a chromosomal abnormality. The normal human chromosome contains 23 pairs of chromosomes, giving a total of 46 chromosomes in each cell, called diploid cells. Aneuploidy refers to the presence of an extra chromosome or a missing chromosome and is the most common form of chromosomal abnormality. Down syndrome, Turner syndrome, and Klinefelter's syndrome constitute the most common chromosomal abnormalities.

Chromosomal disorders are based on-

A. Mutant allele and their defective products

B. Imbalance in chromosome number and chromosome arrangement

C. Mutant allele and chromosome arrangement

D. Mutant allele and imbalance in chromosome number

Answer: B

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67. Read the following and answer the questions that follow:

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chromosomal abnormality. Down syndrome, Turner syndrome, and Klinefelter's syndrome constitute the most common chromosomal abnormalities.

Which of the following is not a characteristic feature of Down's syndrome?

A. Very tall

B. Small round head

C. Furrowed tongue

D. Partially open mouth

Answer: A

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68. Read the following and answer the questions that follow:

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What is the genotype of the person suffering from Klinefelter's syndrome?

A. 44+XXX

B. 42 + XXX

C. 44+XXY

D. 42 +XXY

Answer: C

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69. Read the following and answer the questions that follow:

Chromosomal abnormalities, alterations and aberrations are at the root of many inherited diseases and traits. Chromosomal abnormalities often give rise to birth defects

and congenital conditions that may develop during an individual's lifetime. Examining the karyotype of chromosomes (karyotyping) in a sample of cells can allow detection of a chromosomal abnormality. The normal human chromosome contains 23 pairs of chromosomes, giving a total of 46 chromosomes in each cell, called diploid cells. Aneuploidy refers to the presence of an extra chromosome or a missing chromosome and is the most common form of chromosomal abnormality. Down syndrome, Turner syndrome, and Klinefelter's syndrome constitute the most common chromosomal abnormalities.

Which of the following is incorrect with respect to Klinefelter's syndrome?

A. The fusion of an abnormal egg with a normal sperm

B. The fusion of a normal egg with an abnormal sperm

C. The fusion of a normal egg with a normal sperm

D. An additional copy of X-chromosome

Answer: C

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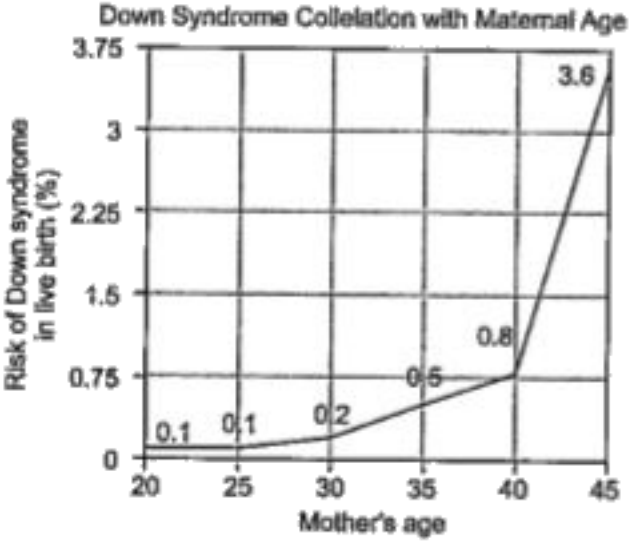
70. Read the following and answer the questions that follow:

Chromosomal abnormalities, alterations and aberrations are at the root of many inherited diseases and traits. Chromosomal abnormalities often give rise to birth defects and congenital conditions that may develop during an individual's lifetime. Examining the karyotype of chromosomes (karyotyping) in a sample of cells can allow detection of a chromosomal abnormality. The normal human chromosome contains 23 pairs of chromosomes, giving a

total of 46 chromosomes in each cell, called diploid cells. Aneuploidy refers to the presence of an extra chromosome or a missing chromosome and is the most common form of chromosomal abnormality. Down syndrome, Turner syndrome, and Klinefelter's syndrome constitute the most common chromosomal abnormalities.



Which of the following statement is true in reference to graph?

A. The incidence of Down syndrome is correlated with maternal age, older women are more likely to become pregnant with fetuses carrying the trisomy 21 genotype.

B. The incidence of Down syndrome is correlated with maternal age, younger women are more likely to become pregnant with fetuses carrying the trisomy 21 genotype.

C. The incidence of Down syndrome is correlated with maternal age older women are more likely to become pregnant with fetuses carrying the trisomy 23 genotype.

D. The incidence of Down syndrome is correlated with maternal age youriger women are more likely to become pregnant with fetuses carrying the trisomy 23 genotype.

Answer: A

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