BIOLOGY

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1 - A typical angiosperm anther is
A- Both (1) and (2)

2 - The inner most layer of microsporangium is
A - Tapetum

3 - The process of formation of microspore from the microspore mother cell is called
A- Microsporogenesis

4 - Exine of pollen is made up of
A- Sporopollenin

5 - Micropyle is formed by
A- Absence of integuments

6 -Mass of cells enclosed by integuments is called
A- Nucellus

7 - Megasporogenesis is
A- Formation of megaspores

8 - How many nuclei are found in a typical female gametophyte?
A-8

9 Assertion (A): Zinc displaces copper from copper sulphate solution.
Reason (R): The E cell of Zn is −0.76 V and that of Cu is +0.34 V .
A- Both A and R are correct and R is the correct explanation of A .

10 - Assertion (A): Molar conductivity of a weak electrolyte at infinite dilution cannot be determined experimentally.
Reason (R): Kohlrausch law helps to find the molar conductivity of a weak electrolyte at infinite dilution.
A- Both A and R are correct and R is the correct explanation of A .

11 - In angiosperm functional megaspore develops into
A- Embryo sac

12 - Characteristics of wind pollinated pollens is/are
A- All of these

13 - Unisexual condition/dioecy prevents
A- Autogamy

14 - Generally pollen tube enters through
A- Micropylar region

15 - In an angiosperm, male plant is diploid and female plant is tetraploid then endosperm will be
A- Pentaploid

16 - Coleorrhiza is
A- Lower end of embryonal axis in monocots

17 - The linking of antibiotic resistance gene with the plasmid vector became possible with
A- DNA ligase

18 - The construction of the first recombinant DNA
was done by using the native plasmid of
A- E. coli

19 - Transfer of any gene into a completely different organism can be done through
A- Transformation

20 - Which of the following key factors, makes plasmid, the vector in genetic engineering?
A- Its ability to carry a foreign gene

21 - Which of the following techniques is most commonly used to separate DNA molecules by size?
A- Gel electrophoresis

22 - Agarose is extracted from
A- Sea weeds

23 - . In gel electrophoresis, the separated DNA fragments are visualised after staining the DNA with ...A... followed by exposure to ...B.... . Here A and B refers to
A- Ethidium bromide, UV radiation

24 -Which of the following is a plasmid?
A- pBR322

25 - 'Ori' is a DNA sequence that is responsible for
initiating replication
A- Initiation of replication

26 - An enzyme catalysing the removal of nucleotides from the ends of DNA is
A- Exonuclease

27 - Significance of heat shock method in bacterial transformation is facilitate
A- Uptake of DNA through transient pores in the bacterial cell wall

28 - Retroviruses in animals including humans are able to change normal cells into
A- Cancerous cells

29 - Which of the following methods(s) is used to introduce foreign DNA into host cells?
A- Gene gun method

30 - Some strains of Bacillus thuringiensis produces
proteins that kills insects like
A- All of these

31 - The protein products of the following Bt toxin genes cryIAc and cryIIAb are responsible for controlling
A- Bollworm

32 - Bt toxin protein crystals present in bacterium Bacillus thuringiensis, do not kill the bacteria themselves because
A- Toxins occur as inactive protoxins in bacteria

33 - Which of the following nematode infects the roots of the tobacco plants which reduce the production of tobacco?
A- Meloidegyne incognitia

34 - A novel strategy was adopted to prevent Meloidegyne incognitia infection in tobacco plants that was based on the process of
A- RNA interference

35 - About ...A... recombinant therapeutics have been approved for human use the world over. In India, ...B... of these are presently being marketed.
Here A and B can be
A- A-30, B-12

36 - The first human drug made by using genetic engineering technique was
A- Insulin

37 - In 1983, Eli Lilly an American company, first prepared two DNA sequences corresponding to A and B-chains of the human insulin and introduced them in the plasmids of Escherichia coli

to produce insulin chains. Chains A and B were prepared separately, extracted and combined by creating
A- Disulphide bond

38 - Which of the following peptide chain is remove during the maturation of proinsulin into insulin?
A- C-chain

39 - Which step was proved to be the main challenge in the production of human insulin by recombinant DNA technology?
A- Getting insulin assembled into mature form

40 - The first clinical gene therapy was done for the treatment of
A- SCID (Severe Combined Immuno Defi ciency) resulting from deficiency of ADA

41 - ADA is an enzyme, which is found lacking in a genetic disorder SCID. What is the full form of ADA ?
A- Adenosine deaminase

42 - ADA deficiency can be cured by ...A... and...B... but it is not fully curative.
Here A and B can be
A- A-bone marrow transplantation, B-enzyme replacement therapy

43 - Animals whose DNA is manipulated to possess
and express an extra (foreign) gene are known as
A- Transgenic animal

44 - Which of the following transgenic human pro-
tein product has been used to treat emphysema?
A- α − 1 antitrypsin

45 - In an angiosperm embryo sac, the number of cells and nuclei respectively are:
A- 7 and 8

46 - Which of the following is incorrectly matched?
A- Middle layer – Persistent at maturity

47 - Which event occurs first during microsporogenesis?
A- Callose wall formation

48 - Which structure is triploid in angiosperms?

A- Endosperm

49 - Double fertilization results in:
A-One diploid and one triploid structure

50 - In a typical dicot embryo, plumule lies:
A- Between cotyledons

51 - Scheme for replication of DNA was proposed by
A- Watson & Crick

52 - The template of replication fork with polarity 5′ → 3′ is ..... while 3′→ 5′ is ..... .
A- discontinuous, continuous

53 - Initiation factor and termination factor are
A- Sigma and Rho factor respectively

54 - Inducer of lac-operon is
A- Lactose

55 -Select the correct anatomical sequence
A- Seminiferous tubules −→ Rete testis −→ Vasa efferentia −→ Epididymis → Vas deferens

56 - . Finger-like projection of infundibulum is known as
A- Fimbriae

57 - Spermiogenesis is
A- Transformation of spermatid into spermatozoa.

58 - Which type of sex-determination is found in grasshopper?
A- XO type

59 - Which of the following is sex-linked recessive disorder
A-Haemophilia

60 - Which of the following is genotypic ratio of Mendel's monohybrid cross?
A- 1 : 2 : 1

61 - During the experiments, Mendel called genes by the term:
A- Factors

62 - When both alleles of a pair are fully expressed in a heterozygote, they are called
A- co-dominance

63 - Which of the following characteristics represent ’Inheritance of blood groups’ in humans?
(i) Dominance
(ii) Co-dominance
(iii) Multiple allelism
(iv) Incomplete dominance
(v) Polygenic inheritance
A- i, ii and iii

64 - Presence of recombinants is due to:
A- Crossing over

65 - The gene for haemophilia is located on ’ X ’ chromosome. Hence it is normally impossible for
A- Haemophilic father to pass the gene to his son.

66 - Given below are two statements: one is labelled as Assertion A and other is labelled as Reason R.
Assertion A : Amniocentesis for sex determination is one of the strategies of Reproductive and Child Health Care Programme.
Reason R : Ban on amniocentesis checks increasing menace of female foeticide.
In the light of the above statements, choose the correct answer from the options given below.
A- A is incorrect but R is correct.

67 - Statement I: Sexually transmitted infections affect only the organs related to reproduction.Statement II: Sexually transmitted infections in females may result in ectopic pregnancy.
A- Statement I is incorrect but statement II is correct.

68 - The method of injecting a sperm directly into the cytoplasm of an ovum in assisted reproductive technology is called
A- ICSI

69 - Which of the following uses hormone to achieve contraception
A- LNG 20

70 - Assertion (A): Parturition is induced by a complex ’neuroendocrine’ mechanism.
Reason (R): The neural signals from the contracting uterus send signals to foetal pituitary to release oxytocin hormone.
A- A is correct but R is incorrect.

71 - Artificial insemination includes
A- Transfer of sperms into the vagina by using artificial means.

72 - During test tube baby procedure, the transfer of zygote or early embryo should be done in
A- Fallopian tube

73-Which organelle is known as the “powerhouse of the cell”?
A- Mitochondria

74 - Which of the following factor has not contributed in the rapid increase of population in India
A-Decline in the number of individuals of reproductive age group.

75 - Statement I: Early symptoms of most STDs are minor and include itching, swelling and slight pain.
Statement II : Blood-transfusion may play a role in transmission of certain sexually transmitted diseases like HIV and Hepatitis-B.
A- Both statement I and II are correct.

76 - Histones are
A- Set of positively charged, basic proteins

77 - The replication of the lagging strand generates small polynucleotide fragments called
A- Okazaki fragment

78 - This enzyme present in retroviruses converts single stranded RNA into a double stranded viral DNA is
A- reverse transcriptase

79 - The three codons which result in the termination of polypeptide chain synthesis are
A- UAA, UAG, UGA

80 - Which is not true regarding VNTRs?
A- They constitute 10% of human genome

81 - . Find out the correct statement.
A- Genetic makeup of the sperm determines the sex of the child in human.

82 - Karyotype of Klinefelter’s syndrome is
A- 44+ XXY

83 - The immature male germ cell undergoes division to produce sperms by the process of spermatogenesis. Choose the correct option from below with reference to the above statement.
A- Secondary spermatocytes have 23 chromosomes and undergo second meiotic division.

84 - . Which is the correct path for the secretion and transport of milk in mammary gland?
A- Alveoli -Cavity of alveoli - Mammary tubule -Mammary duct -Mammary ampulla -Lactiferous duct

85 - The milk produced during the initial days of lactation is called
A- Colostrum

86 - The release of sperms from seminiferous tubules is
A- Spermiation

87 - Which chromosome in the human genome has the highest number of genes?
A- Chromosome 1

88 - Unequivocal proof that DNA is the genetic material was first proposed by
A- Alfred Hershey and Martha Chase

89 -Who proposed that the genetic code for amino acids should be made up of three nucleotides?
A- George Gamow

90 - A transcription unit in DNA is defined primarily by the three regions in DNA and these are with respect to upstream and down stream end
A- Promotor, Structural gene, Terminator

91 - Which of the following is not the characteristic feature of the genetic code
A- The code has punctuations

92 - The enlarged end of penis is covered by a loose fold of skin is called.
A- foreskin

93 - Which of the following statements is correct regarding DNA replication?
A- Replication is semi-discontinuous

94 -Which enzyme removes RNA primers during DNA replication?
A- DNA polymerase I

95 - In lac operon, repressor binds to:
A- Operator

96 - Which of the following is NOT part of transcription unit?
A- Operator

97 - Which of the following is a palindromic sequence?
A- GAATTC

98 - In eukaryotes, mRNA processing involves:
A- All of these

99 - Which of the following hormones is called “hormone of pregnancy”?
A- Progesterone

100 - Which of the following is NOT a function of placenta?
A- Gamete formation