BIOLOGY

BOOKS - MCGROW HILL EDUCATION

BIOLOGY (HINGLISH)

HEREDITY AND EVOLUTION

Elementary Questions

1. Mendel was born in

A. Australia

B. Germany

C. Britain

D. Czechoslovakia

Answer: D

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2. Mendel conducted his hybridisation experiment with

A. chick pea

B. pigeon pea

C. garden pea

D. wild pea

Answer: C

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3. Mendel studied seven contrasting characters for his breedinig experiment with

Pisum sativum, which of the following character did he not use?

A. pod colour

B. pod shape

C. leaf shape

D. plant height

Answer: C

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4. Mendel was lucky in the choice of the material of his experiments, among the following, which contributed, to his success?

A. he observed distinct inherited traits

B. he qualitatively analysed his date

C. he liked pea plants

D. he considered only one character at one time

Answer: D

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5. G. J. Mendel died in

A. 1884

B. 1890

C. 1900

D. 1926

Answer: A

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6. The year 1990 AD is highly significant for genetics due to

A. principle of linkage

B. chromosome theory of heredity

C. rediscovery of mendelism

D. discovery of genes

Answer: C

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7. Genotype means

A. genetic composition of the individual

B. genetic composition of the germ cell

C. genetic composition of plastids

D. genetic composition of an organ

Answer: A

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8. The physical manifestation of an organism's genes is its

A. environment

B. phenotype

C. genetic code

D. genotype

Answer: B

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9. An organism with two identical alleles of a gene in a cell is called

A. homozygous

B. dominant

C. heterozygous

D. hybrid

Answer: A

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10. When an individual is having both the alleles of contrasting characters it is said to be

A. heterozygous

B. dioecious

C. monoecious

D. linked genes

Answer: A

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11. When an allele fails to express itself in F, generation in the presence of other allele, the former is said to be

A. recessive

B. codominant

C. complementary

D. epistatic

Answer: A

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12. Alleles are

A. homologous chromosome

B. chromosome that have crossed over

C. alternate forms of gene

D. linked genes

Answer: C

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13. Mendel's laws apply only when

A. F_1 in monohybrid cross shows two types of individuals

B. the characters are linked

C. parents are pure breeding

D. first pair of contrasting character is dependent upon other pairs

Answer: C

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14. Which of Mendel's procedures differed from those of his predecessor and contributed most of his success?

A. he observed many characteristics of each trait

B. he observed distinct inherited traits

C. he quantitatively analysed his data

D. he kept breeding records

Answer: C

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15. If a plant is heterozygous for tallness, the F_2 generation has both tall and dwarf plants. This proves the principle of

A. dominance

B. segregation

C. independent assortment

D. incomplete dominance

Answer: B

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16. If a dihybrid pea plant heterozygous for flower colour (red dominant over white) and seed shape (round dominant over wrinkled) under goes selfing, the types of gametes produced are:

A. 2

B. 4

C. 8

D. 16

Answer: B

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17. Which genotype represents a true dihybrid condition?

A. Tt Rr

B. Tt rr

C. Tt rr

D. Tt RR

Answer: A

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18. The crossing of a homozygous tall plant with a dwarf would yield F_2 plants in the ratio of

A. two tall and two dwarf

B. one homozygous tall, one homozygous dwarf and two heterozygous tall

C. all homozygous dwarf

D. all homozygous tall

Answer: B

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19. When a true breeding tall plant is crossed with a true breeding short plant and the F_1 produced is self pollinated to produce F_2 ratio of true breeding tall and true breeding short plant in F_2 will be

A. $1:2$

B. $1:1$

C. $2:1$

D. $1:3$

Answer: B

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20. The cross used to ascertain whether the plant is homozygous or heterozygous is

A. linkage cross

B. reciprocal cross

C. back cross

D. monohybrid cross

Answer: C

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21. The genotype of a dominant parent is determined by crossing it with the recessive parent. This cross is called

A. back cross

B. test cross

C. long cross

D. out cross

Answer: B

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22. The results of a test cross reveal that all the offspring resemble the parent being tested. This parent must be

A. heterozygous

B. homozygous

C. recessive

D. haploid

Answer: B

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23. Chromosome theory of heredity was postulated by

A. Charles Darwin

B. Gregor Mendel

C. Sutton and Boveri

D. Har Gobind Khorana

Answer: C

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24. Chromosome theory of heredity was formulated for the first time on the basis of following observation:

A. chromosomes exhibiting segregation and independent assortment during meiosis

B. chromosomes being main structure in nucleus

C. determination of sex through sex chromosomes

D. a fixed number of chromosomes in each cell of an organism

Answer: A

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25. Continuity of germplasm theory by Weismann was proposed in

A. 1838

B. 1883

C. 1865

D. 1859

Answer: B

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26. Which chromosome set is found in male grasshopper?

A. XY

B. X

C. YY

D. XX

Answer: B

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27. Allosomes are

A. bead like structure on chromosomes

B. sex chromosomes

C. rounded bodies

D. node like structure on chromosomes

Answer: B

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28. Mutation is

A. a change that is inherited

B. a change, which affects the parents only but never inherited

C. a change, which affects the offspring of F2 generation only

D. a factor responsible for plant growth

Answer: A

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29. Which one of the following mutations is not hereditary?

A. gametic

B. zygotic

C. somatic

D. genetic

Answer: C

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30. Recessive mutation are expressed normally

A. has to express always since it is a mutation

B. in heterozygous condition

C. neither in homozygous nor in heterozygous condition

D. in homozygous condition

Answer: D

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31. Which of the following is not heritable?

A. point mutation

B. chromosomal mutation

C. somatic mutation

D. gene mutation

Answer: C

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32. Mutations are generally

A. recessive

B. codominant

C. incompletely dominant

D. dominant

Answer: A

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33. Which of the following is a mutagen?

A. SO_2

B. CO_2

C. CO

D. HNO_2

Answer: D

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34. Mutations are usually induced by

A. gamma rays

B. alpha rays

C. beta ray

D. visible light

Answer: A

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35. The plant that was made popular by "De Vries mutation theory":

A. Triticum vulgare

B. Oenothera lamarkiana

C. Pisum sativum

D. Primula vulgaris

Answer: B

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36. Gene mutation is caused

A. due to reproduction

B. due to changes in the sequence of nitrogen bases

C. due to linkage

D. due to changes in the sequence of genes in DNA

Answer: B

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37. Which of the following is an example of a point mutation?

A. thalassaemia

B. night blindness

C. sickle cell anaemia

D. down's syndrome

Answer: C

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38. Point mutation is

A. loss of gene

B. change in a base of gene

C. addition of a gene

D. deletion of a segment of gene

Answer: B

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39. Mutations used in agriculture are

A. lethal and recessive

B. artificially induced and recessive

C. lethal and dominant

D. none of the above

Answer: B

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40. Sex chromosomes may be found in

A. unisexual plant

B. unisexual flower

C. monocarpic plant

D. intersexual plant

Answer: A

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41. Inheritance of total colour-blindness is

A. X-linked

B. XY-linked

C. Y-linked

D. None of these

Answer: A

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42. Which one of the following is the sex linked character in human inheritance?

A. diabetes insipidus

B. colour-blindness

C. breast in females

D. beard in males

Answer: B

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43. A man is haemophiliac. This indicates that he

A. inherited the condition from his father

B. is afraid of sight of blood

C. inherited the condition from his mother

D. is carrying parasite in his blood

Answer: C

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44. Genes located on Y-chromosome are

A. mutant genes

B. sex-linked genes

C. autosomal genes

D. holoandric genes

Answer: D

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45. Autosomes in humans are

A. 22 pairs

B. 23 pairs

C. 43 pairs

D. 11 pairs

Answer: A

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46. "Barr body" is derived from

A. autosomes in males

B. autosomes in females

C. x-chromosome in female

D. x-chromosome in males

Answer: C

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47. Barr body represents

A. heterochromatin in male and female cells

B. one of the two X-chromosomes in somatic cells of female

C. Y-chromosome in somatic cells

D. all hetrochromatin in female cells

Answer: B

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48. Heterosis is

A. hybrid incompatibility

B. hybrid vigour

C. structural hybridity

D. hybrid sterility

Answer: B

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49. The identical twins are born when

A. one ovum is fertilised by one sperm

B. one ovum is fertilised by two sperms

C. two ova are fertilised by two sperms

D. two ova are fertilised by two sperms

Answer: A

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50. Pure line selection results in retention of desired characters

A. for one generation

B. for two generations

C. for several generations

D. permanently

Answer: C

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51. Down's syndrome is due to

A. nondisjunction of chromosomes

B. crossing over between genes

C. linkage of genes

D. sex linked inheritance

Answer: A

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52. Which of the following have equal number of chromosomes?

A. Klinefelter's syndrome and Down's syndrome

B. Klinefelter's and Turner's syndrome

C. Turner's syndrome and Down's syndrome

D. Turner's syndrome and gynandromorph

Answer: A

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53. Genetic information in a DNA is coded in the

A. sequences of nucleotides

B. base pairing

C. proportion of each base

D. coding sequence

Answer: A

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54. The DNA is the genetic material was proved conclusively be

A. J.D.Watson

B. Hershey and Chase

C. Alfred Griffith

D. Boveri and Sutton

Answer: B

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55. For structure of nucleic acid, which of the following statements is wrong?

A. DNA can be single stranded in some viruses

B. RNA can be double stranded occasionally

C. there are as many as 12 bases per turn in Z DNA

D. the length of one helix is 45 A in B DNA and in Z DNA

Answer: D

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56. Watson and Crick composed the model of DNA structure in

A. 1953

B. 1943

C. 1955

D. 1963

Answer: A

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57. DNA strands are anti-parallel because of

A. H-bonds

B. Phospho diester bonds

C. disulphide bonds

D. peptide bonds

Answer: A

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58. A short length of a DNA molecule contains 120 adenine and 120 cytosine bases. The total number of nucleotides in this DNA fragment is

A. 480

B. 120

C. 60

D. 240

Answer: A

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59. Duplication of DNA is called

A. replication

B. tranduction

C. transcription

D. transduction

Answer: A

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60. DNA replication is

A. continuous and conservative

B. discontinuous and semiconservative

C. semidiscontinuous and semiconservative

D. conservative and semidiscontinuous

Answer: B

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61. Jumping genes are now known as

A. transposons

B. transversion

C. transformation

D. transduction

Answer: A

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62. DNA polymerase enzyme is required for the synthesis of

A. RNA from DNA

B. DNA from DNA

C. RNA from RNA

D. DNA from RNA

Answer: B

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63. Which enzyme catalyses the synthesis of a new strand for a DNA molecule by linking nucleotides to the developing strand?

A. RNA polymerase

B. DNA ligase

C. DNA polymerase

D. topoisomerase

Answer: C

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64. In DNA replication, the Okazaki fragments on the lagging strand are joined together by:

A. DNA polymerase

B. primase

C. helicase

D. DNA ligase

Answer: D

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65. Technique for detecting and screening the nutritional mutants in Neurospora crassa was developed by

A. Beadle and Tatum

B. Bateson and Punnet

C. Luria Dulbecco

D. Knoll and Ruska

Answer: A

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66. There are 64 codons in genetic code dictionary because

A. there are 64 types of rRNA's found in the cell

B. there are 44 meaningless and 20 codons for amino acids

C. genetic code is triplet

D. there are 64 amino acids to be coded

Answer: C

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67. Genetic code was deciphered by chemically synthesising nucleotides by

A. Watson and Crick

B. Beadle and Tatum

C. M. Nirenberg and H. Khorana

D. K. Correns and Max Theiler

Answer: C

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68. Genetic code was discovered by

A. Holley and Nirenberg

B. Nirenberg and Matthei

C. Holley Nirenberg and Khorana

D. W. Fleming and Matthei

Answer: B

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69. Nirenberg used an artificial mRNA poly U (UUU...U) which gave rise to polyphenyl alanine. This proved that

A. artificial mRNA was not useful for the study of genetic code

B. genetic code is triplet

C. triplet UUU code for phenylalanine

D. genetic code is non-overlapping

Answer: C

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70. Initiation of polypeptide chain in protein synthesis is induced by

A. methionine

B. leucine

C. lysine

D. glycine

Answer: A

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71. UAA, UAG and UGA are

A. non overlapping codons

B. non sense codons

C. degenerate codons

D. chain initiator codons

Answer: A

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72. Termination of chain growth in protein synthesis is brought about by the codons

A. UAA, UAG and UGA

B. UCG, ACC and GCG

C. UUG, UAG and UGA

D. UGA, UAG and AUG

Answer: A

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73. Because most of the amino acids are represented by more than one codons, the genetic code is said to be

A. deaminated

B. comma less

C. degenerate

D. overlapping

Answer: C

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74. Degeneracy in genetic code was found by

A. A. Kornberg

B. Barbara Mc Clintock

C. Bernfield and Nirenberg

D. Hershey and Chase

Answer: C

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75. Gene control

A. protein synthesis but not heredity

B. protein synthesis and heredity

C. biochemical reaction of some enzymes

D. heredity but not protein synthesis

Answer: B

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76. Which of following has a clover leaf shaped structure?

A. tRNA

B. rRNA

C. DNA

D. mRNA

Answer: A

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77. Anticodon is associated with

A. mRNA

B. DNA

C. tRNA

D. rRNA

Answer: C

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78. The process "translation" means

A. DNA synthesis

B. RNA synthesis

C. protein synthesis

D. ribosome assembly

Answer: C

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79. Nobel Prize to A. Kornberg and S. Ochoa was given for

A. artificial synthesis of DNA and RNA

B. theory of natural selection

C. mutation theory

D. one gene one polypeptide chain theory

Answer: A

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80. Retrovirus has the following as its genetic material

A. single stranded DNA

B. double stranded duplex DNA

C. DNA-RNA hybrid

D. RNA

Answer: D

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81. Of the following, which sequence is present in Rous Sarcoma Virus?

A. DNA rarr RNA -»proteins

B. DNA rarr DNA rarr proteins

C. RNA rarr DNA —» proteins

D. RNA rarr DNA rarr RNA rarr proteins

Answer: D

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82. Who coined the term gene?

A. McClintock

B. Waldeyer

C. Johannsen

D. Mendel

Answer: C

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83. A functional unit in a gene is

A. muton

B. recon

C. cistron

D. gene

Answer: C

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84. The terms cistron, recon and muton were proposed by

A. Bateson

B. J. Lederberg

C. S.Benzer

D. T.H.Morgan

Answer: C

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85. The term genome is used for

A. diploid set of chromosomes

B. polyploid set of chromosomes

C. triploid set of chromosomes

D. haploid set of chromosomes

Answer: D

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86. Barbara Mc Clintock work showed that in maize

A. RNA transcribed from genes is report to form mature mRNA

B. genes are stably located at specific sites of chromosomes

C. certain genes move from one chromosome to another or within the

same chromosome

D. genes are exchanged between chromosomes during chiasmata formation

Answer: C

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87. Which one of the following scientists got the Nobel Prize for discovering the concept of mobile genetic elements in maize?

A. Jacob and Monod

B. Beadle and Tatum

C. H. Khorana

D. Barbara Mc Clintock

Answer: D

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88. Which one of the following scientists developed the process of DNA fingerprinting?

A. KaryB. Mullis

B. T.H.Morgan

C. H.O.Smith

D. Alec Jeffreys

Answer: D

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89. The recent techniques used for separating fragments of DNA is

A. northern bloting

B. southern bloting

C. eastern bloting

D. western bloting

Answer: B

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90. Which one of the following is related with genetic engineering?

A. plasmids

B. mitochondria

C. mutations

D. ribosomes

Answer: A

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91. The first step in genetic engineering as

A. isolation of protein

B. purification of protein

C. isolation of genetic material

D. isolation of RNA

Answer: C

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92. H. Harris and J.F. Watkins in 1965 first time reported the fusion of following cell lines to form hybrids

A. mouse and man

B. mouse and hamster

C. mouse and chick erythrocytes

D. mouse and Drosophila

Answer: A

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93. Term hybridoma implies

A. DNA-RNA hybrid

B. recombination of DNA molecules

C. somatic hybridisation

D. gametic fusion

Answer: C

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94. Restriction enzymes are isolated chiefly from

A. algae

B. fungi

C. protozoans

D. procaryotes

Answer: D

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95. Who among the following discovered the enzyme restriction endonuclease?

A. Hamilton Othanel Smith

B. Sir Godfrey Hounsfield

C. F. Jacob

D. Andre Lwoff

Answer: A

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96. Restriction endonucleases are utilised in genetic engineering techniques as

A. molecular cement for combining DNA bits into long chains

B. molecular scalpels for cutting DNA at specific sites

C. molecular scalpels for cutting DNA break up

D. molecular build up nucleotides in tandem

Answer: B

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97. Genetic engineering is used in

A. gene therapy

B. vaccine production

C. obtaining transgenic plants

D. all of the above

Answer: D

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98. Hybridisation through protoplast fusion is known as

A. parthenogenesis

B. parasexual hybridisation

C. sexual hybridisation

D. asexual hybridisation

Answer: B

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99. The transgenic animals are those that have

A. foreign DNA in some of its cells

B. foreign DNA in all its cells

C. foreign RNA in all its cells

D. both (a) and ©

Answer: B

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100. Producing a 'giant mouse' in the laboratory was possible through

A. gene mutation

B. gene duplication

C. gene synthesis

D. gene manipulation

Answer: D

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101. One of the following is transgenic of organisms

A. Holly sheep and Flavr savr tomato

B. Holly sheep and Cotton Bt

C. Dolly sheep and Cotton Ct

D. Flavr savr tomato and Cotton Bt

Answer: D

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102. Which one of the following scientists got the Nobel Prize for his invention polymerase chain reaction (PCR)?

A. F. Sanger

B. Paul Berg

C. Alec Jeffreys

D. Kary B. Mullis

Answer: C

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103. Human genome contains about

A. 10,000 nucleotides

B. 10,000 genes

C. 6 billion nucleotides

D. 6 billion genes

Answer: C

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Elementary Questions Evolution

1. Earth originated in the past

A. 4.6 billion years

B. 1.6 billion years

C. 7.6 billion years

D. 86 million years

Answer: A

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2. According to scientists, the Big Bang occurred approximately_____years ago.

A. 100 million

B. 100 thousand

C. 1 billion

D. 15 billion

Answer: D

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3. The scientist related with the theory of spontaneous generation and experiments with swan-necked flasks is

A. Van Helmont

B. Louis Pasteur

C. Miller

D. Haeckel

Answer: B

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4. Pasteur succeeded in disproving the spontaneous generation theory because

A. he was lucky

B. he was ingenious in drawing out the neck of glass flasks, so as to provide access to air but not to microorganisms

C. of the fact that sample of yeast taken by him was dead

D. of the clear surrounding of his laboratory

Answer: B

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5. Who said that organisms develop from preexisting organisms?

A. Aristotle

B. Louis Pasteur

C. Morgan

D. Oparin

Answer: B

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6. The first organisms were

A. primitive eukaryotes

B. aerobic bacteria

C. prokaryotic heterotrophs

D. photosynthetic

Answer: D

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7. Which one of the following gases was not present in free form at the time life originated on the earth?

A. methane

B. hydrogen

C. ammonia

D. oxygen

Answer: D

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8. Why was the primitive atmosphere of Earth more beneficial to the origin of life than the modern atmosphere of Earth?

A. the primitive atmosphere had a layer of ozone that shielded the first delicate cells

B. the primitive atmosphere was a reducing one that facilitated the formation of

complex substances from simple molecules

C. the primitive atmosphere was an oxidising one that facilitated the formation of complex substances from simple molecules

D. the primitive atmosphere had less free energy than the modern atmosphere, and thus newly formed organisms were less likely to be destroyed

Answer: B

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9. Russian scientist who proposed the theory of origin of life was

A. Oparin

B. Miller

C. Haldane

D. Fox

Answer: A

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10. Stanley Miller conducted an experiment to demonstrate that simple organic molecules like amino acids could be produced if an electric discharge is passed through a mixture of such gases as might have been present in the atmosphere of early earth. The gaseous mixture he used in the experiment comprised

A. methane, ammonia, hydrogen, water vapours

B. methane, nitrogen, hydrogen, water vapours

C. ammonia, carbon dioxide, nitrogen, water vapours

D. methane, ammonia, nitrogen, water vapours

Answer: A

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11. In their laboratory simulation of early Earth, Miller and Urey observed the abiotic synthesis of

A. amino acids

B. coacervates

C. DNA

D. liposmes

Answer: A

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12. The first genetic material was most likely

A. a DNA polymer

B. a DNA oligonucleotide

C. a protein

D. an RNA polymer

Answer: D

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13. The richest source of fossils is

A. basalt

B. granite

C. lava

D. sedimentary rock

Answer: D

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14. Study of fossils is known as

A. palaeobotany

B. palaeontology

C. anatomy

D. ornithology

Answer: B

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15. Biologists who study the sequences of organisms in the fossil record are

A. taxonomists

B. palaeobiologists

C. misologists

D. systematists

Answer: B

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16. Famous palaeobotanist of India was

A. P.Maheshwari

B. S.R. Kashyap

C. B.P.Pal

D. B. Sahni

Answer: D

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17. Fossils are now date by

A. stratigraphic period

B. studying their association with other mammals

C. amount of calcium present as residue

D. radioactive carbon content

Answer: D

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18. Which were dominant in Mesozoic?

A. dinosaurs

B. gymnosperms

C. fishes

D. mammals

Answer: A

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19. Dinosaurs were abundant in

A. Jurassic

B. devonian

C. permian

D. pleistocene

Answer: A

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20. The "Golden age of Reptiles" was

A. late Paleozoic

B. cenozoic

C. mesozoic

D. proterozoic

Answer: C

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21. Palaeontological evidence in favour of organic evolution is beautifully illustrated by

A. duck billed Platypus

B. Archaeopteryx

C. darwin's finches

D. peppered moth

Answer: B

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22. The fossil remains of Archaeopteryx is a connecting link between

A. amphibians

B. reptiles and birds

C. fish and amphibians

D. reptiles and mammals

Answer: B

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23. Which of the following set is the evidence of evolution?

A. homologous and vestigial organs

B. analogous and vestigial organs

C. homologous and analogous organs

D. all of the above

Answer: A

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24. Homologous structures have

A. dissimilar origin and dissimilar functions

B. dissimilar origin but similar functions

C. similar origin but similar or dissimilar functions

D. dissimilar origin and dissimilar structure

Answer: C

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25. Of the following anatomical structures, which is homologous to the wing of a bat?

A. the arm of a human

B. the wing of a butterfly

C. the tail of a fish

D. the dorsal fin of a shark

Answer: A

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26. Analogous organs have a

A. common embryonic origin but perform different functions

B. different embryonic origin and perform different functions

C. common embryonic origin and perform similar functions

D. different embryonic origin but perform similar functions

Answer: D

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27. Which one of the following sets of structures includes only analogous organs?

A. wings of butterfly, housefly and bat

B. hind legs of horse

C. hands of man, monkey and kangaroo

D. mandibles of cockroach, mosquito and honeybee

Answer: A

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28. Which of the following is an example of analogy?

A. limb of horse and man

B. wings of pigeon of bat

C. wings of bird and butterfly

D. none of the above

Answer: C

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29. Which of the following set represents all vestigial structures in the human body?

A. vermiform appendix, body hair and cochlea

B. wisdom teeth, coccyx and patella

C. coccyx, vermiform appendix and muscles of ear pinna

D. body hair, muscles of ear pinna and atlas vertebra

Answer: C

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30. The essence of Haeckel's Recapitulation theory is:

A. inheritance of acquired characters

B. alternation of generations

C. ontogeny repeats phylogeny

D. prodigality of reproduction

Answer: C

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31. Presence of gill slits in the embryo of all vertebrates supports the theory of

A. organic evolution

B. recapitulation

C. metamorphosis

D. biogenesis

Answer: B

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32. Biogenetic law was propounded by

A. Von Baer and Haeckel

B. Von Bier and Aristotle

C. Haeckel and Mendel

D. Mendel and Griffith

Answer: A

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33. Appearance of ancestral characters in the new born, such as tail, multiple mammae, etc., are known as

A. homologous

B. analogous

C. atavistic

D. vestigial

Answer: C

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34. Which animal has become extinct recently?

A. draco

B. dinosaur

C. pteridosperms

D. mammoth

Answer: D

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35. Evolution is defined as

A. history of race

B. development of race

C. history and development of race with variations

D. progressive history of race

Answer: C

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36. Lamarck belongs to

A. England

B. France

C. Sweden

D. Austria

Answer: B

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37. The book named "Philosophic Zoologique" was published in 1809 and was written by:

A. Mendel

B. Darwin

C. DeVries

D. Lamarck

Answer: D

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38. Theory of inheritance of acquired characters was put forth by

A. DeVries

B. Lamarck

C. Weismann

D. Galton

Answer: B

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39. Penguin is a bird that lost the use of its wings by not flying. Such a statement would express the views of

A. Darwin

B. Wallace

C. Lamarck

D. Huxley

Answer: C

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40. Germplasm theory was given by

A. Lamarck

B. Weismann

C. Darwin

D. DeVries

Answer: B

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41. A scientist kept 80 generations of Drosophila in darkness, even after that the flies had normal eyes. This disapproves law of

A. natural selection

B. acquired characters

C. use and disuse

D. synthetic theory

Answer: B

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42. The biggest opponent of Lamarck was

A. G. Cuvier

B. A. Weismann

C. I. Pavlov

D. Kamrer

Answer: B

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43. Basic idea of organic evolution is

A. cosmic evolution

B. descent with modification

C. special creation

D. spontaneous generation

Answer: B

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44. What did Charles Darwin publish in 1859?

A. Origin of Species by Natural selection

B. Species plantarum

C. Philosophic Zoologique

D. De Naturien Familien

Answer: A

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45. All of the following influenced Darwin as he synthesised the concept of natural selection except

A. the finches of the Galapagos

B. Malthus's essay on the principle of population

C. the results of artificial selection

D. Mendel's laws of inheritance

Answer: D

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46. The book 'Descent of Man and Selection in Relation to Sex' was written by:

A. Charles Darwin

B. J.B. Lamarck and C. Darwin

C. F.B. Sumner and E. Darwi

D. Robert Brown

Answer: A

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47. The Galapagos Islands are associated with the visit of

A. Jean Lamarck

B. Charles Darwin

C. Gregor Mendel

D. Alfred Wallace

Answer: B

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48. Darwin worked on Galapagos finches. The number of species of these finches is

A. 10

B. 12

C. 14

D. 11

Answer: C

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49. Which of the following was most influential upon Darwin's formulation of theory of natural selection?

A. De Vries concept of mutation

B. Wallace's paper on survival

C. Malthus's essay on population

D. Lamarck's on inheritance of acquired characters

Answer: C

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50. Which one of the following evolutionists proposed the theory of evolution similar to Charles Darwin's?

A. Alfred Russell Wallace

B. Erasmus Darwin

C. Thomas Godfrey

D. Thomas Robert Malthus

Answer: A

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51. Survival of the fittest' was used by

A. Charles Darwin

B. Jean Baptiste Lamarck

C. Hugo de Vries

D. Herbert Spencer

Answer: D

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52. The ultimate source of organic variation is

A. natural selection

B. sexual reproduction

C. hormonal action

D. mutations

Answer: D

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53. After observing the variations Hugo de Vries first of all described the mutation in

A. Oenothera lamarkiana

B. Neurospora crassa

C. Pisum sativum

D. Drosophila melanogaster

Answer: A

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Higher Order Thinking Questions

1. Mendel crossed a pure white flowered recessive pea plant with a dominant pure red flowered plant. The first generation of hybrids from the cross should show

A. 50% white flowers and 50% red flowers

B. all red flowered plants

C. 75% red flowered and 25% red flowered plants

D. all white flowered plants

Answer: B

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2. If a couple has three daughters, what are the chances that the fourth child will be a son?

A. 1

B. 0.75

C. 0.5

D. 0

Answer: C

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3. If a heterozygous tall plant is crossed with a homozygous dwarf plant, the proportion of dwarf progeny will

A. 0.5

B. 0.75

C. 1

D. 0.25

Answer: A

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4. Blue eye colour in human is recessive to brown eye colour. The expected children of a marriage between blue-eyed woman and brown-eyed male who had a blue-eyed mother are likely to be

A. all blue-eyed

B. three blue-eyed and one brown-eyed

C. all brown-eyed

D. one blue-eyed and one brown-eyed

Answer: D

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5. Two bacteria found to be very useful in genetic engineering experiments are

A. Nitrosomonas and Klebsiella

B. Escherichia and Agrobacterium

C. Nitrosomonas and Azotobacter

D. Rhizobium and Diplococcus

Answer: B

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6. The reason why some mutations, which are harmful, do not get eliminated from gene pool is that

A. they are recessive and carried by heterozygous individuals

B. they are dominant and show up more frequently

C. genetic drift occur because of a small population

D. they have future survival value

Answer: A

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7. Human offspring would be female, if 23rd pair of chromosome in zygote is

A. YY

B. XY

C. XX

D. XYY

Answer: C

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8. If the base sequences of the strand of DNA is CAT TAG CAT CAT GAC what will be the base sequence of complementary RNA strand?

A. GTAATGATGGUACUG

B. TAG ATG GTA GAT GAT CTS

C. GUAAUCGUAGUACUG

D. GTA ACC GAT GAT GAT CAT

Answer: C

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9. In protein synthesis the codon used as a start signal is

A. UAA

B. CCA

C. AUG

D. GCA

Answer: D

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10. The first successfully cloned mammal that gained world-wide publicity was

A. Molly, a sheep

B. Polly, a sheep

C. Chance, a bull

D. Dolly, a sheep

Answer: D

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11. The information carried by RNA in retroviruses is put in the DNA code by

A. DNA polymerase

B. DNA ligase

C. RNA synthetase

D. reverse transcriptase

Answer: D

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12. The simple organic compounds that may have first evolved in the direction of origin of life on Earth may have been

A. protein and amino acid

B. protein and nucleic acid

C. urea and nucleic acid

D. urea and amino acid

Answer: B

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13. Which one of the following animals exhibits connecting link evolution

A. Limulus

B. Sphenodon

C. Peripatus

D. Pheretima

Answer: C

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14. Which of the following is a vestigial organ in the human body?

A. eyelid

B. eyelash

C. caecum

D. appendix

Answer: C

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15. The earliest animal to have been domesticated by man most likely the

A. horse

B. pig

C. dog

D. cow

Answer: C

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16. The first hormone artificially produced culturing bacteria is

A. insulin

B. thyroxine

C. testosterone

D. adrenalin

Answer: A

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17. Weismann cut off tails of mice generation but tails neither disappeared nor shortened showing that

A. Darwin was correct

B. tail is an essential organ

C. mutation theory is wrong

D. Lamarckism was wrong in inheritance of acquired characters

Answer: D

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