BSc Part III Semister VI Paper II

Molecular Biology and r DNA technology

Q.1 Which of the following is not a feature of the genetic code?

a) Triplet

b) Degenerate

c) Non-overlapping

d) Ambiguous

Ans : d

Q.2  The wobble hypothesis was devised by \_\_\_\_\_\_\_\_\_\_\_\_  
a) Arthur Kornberg  
b) Francis Crick  
c) James Watson  
d) William Asbury

Ans: b

Q. 3 Which of the following is not a chain termination codon?  
a) UAA  
b) UGA  
c) UAG  
d) UGG

Ans d

Q. 4 The first amino acid added by the tRNA is added to the anticodon \_\_\_\_\_\_\_\_\_\_\_\_  
a) AUG  
b) UAC  
c) ACG  
d) UGC

Ans: b

Q. 5 The stop codon on the mRNA is read by \_\_\_\_\_\_\_\_\_\_  
a) Ribosome  
b) tRNA  
c) RF1,RF2  
d) mRNA

Ans: C

Q. 6 With respect to the genetic code reading frame, which of the following is wrong?  
a) 5’ → 3’ direction reading frame  
b) The code is non – overlapping  
c) No gaps present  
d) Flexible reading frame

Ans : d

Q. 7 What is the amino acid binding sequence in tRNA?  
a) AUG  
b) GGU  
c) CCA  
d) T ψ C

Ans is C

Q. 8 Which part of the ribosome identifies the Shine – Dalgarno sequence?  
a) Protein  
b) 16S rRNA  
c) 23S rRNA  
d) 5S rRNA

Ans: b

Q. 9 Aminoacyl t RNA synthetase catalyses\_\_\_\_\_\_

a) Addition of fatty acid to t RNA

b) Addition of sugar to m RNA

c) Addition of amino acid to t RNA

d) Addition of nucleic acid to r RNA

Ans : c

Q 10 Which position of a codon is said to wobble?  
a) First  
b) Second  
c) Third  
d) Fourth

Ans: c

Q. 11 During translation, activated amino acids get linked to t RNA . This process is commonly called as

a) Charging of t RNA

b) Discharging of t RNA

c) Aminoacylation of t RNA

d) Both a and c

Ans: d

Q. 12 In m RNA molecule untranslated regions are present at

a) 5’- end (before start codon)

b) 3’- end (after stop codon)

c) both a and b

d) 3’- end only

Ans : c

Q. 13 Which organell in the cell is called as Protein factories

a) Nucleus

b) Ribosome

c) Mitochondria

d) Ribozyme

Ans: b

Q.14 First Amino acyl t RNA complex binds to which site of the ribosome first?

a) A – site

b) P – site

c) E – site

d) D- site

Ans: b

Q.15 From which site synthesized polypeptide chain is released?

a) A – site

b) P – site

c) E – site

d) D- site

Ans: b

Q 16 Which enzyme catalyses the elongation activity in translation process.

1. DNA Polymerase
2. RNA polymerase
3. Peptidyl transferase
4. Aminoacyl synthetase

Ans: c

Q.17 Which termination factors play important role during polypeptide chain termination?

a) Sigma factor

b) Rho factor

c)) R1, R2 and S factors

d) transcription factors

Ans : C

Q.18 Increase in cellular efficiency of translation is brought about by formation of \_\_\_\_\_\_\_

a) Ribomore

b) Polyribosome

c) Ribozyme

d) Polyribomer

Ans: b

Q 19 Prokaryotic ribosome is made up of \_\_\_\_\_\_ subunits

a) 50S, 30S

b) 40S, 30S

c) 40S, 60S

d) 50S, 60S

Ans : a

Q. 20 In prokaryotes, the first amino acyl- t RNA complex has amino acid\_\_\_\_\_\_\_\_

a) N-formyl-methionine

b) Methionine

c) Alanine

c) Serine

Ans: a

Q. 21 Type of Restriction enzyme used in r DNA technology is \_\_\_\_\_

a) Type I

b) Type II

c) Type III

d) None of the above

Ans : Type II

Q. 22 Which of the following contains the key tools for recombinant DNA Technology?

a) Restriction endonucleases, ligases, vectors, host organism

b) Exonuclease, primers, fermentors

c) Vectors, Taq polymerase, primers

d)Restriction exonuclease, ligases, primers, Bioreactor

Ans : a

Q. 23 A restriction endonuclease breaks bonds between the

a) base pairs of a DNA molecule

b) base pairs of a DNA-RNA hybrid molecule

c) sugar and phosphate components of a nucleic acid molecule

d) exons and introns of a DNA molecule

Ans: C

Q. 24 Which restriction enzyme is used for cleaving DNA sequence 5’-GAATTC-3’.

a) *Hin*dIII

b) *Bam*H1

c) *Sal* I

d) *Eco*RI

Ans: d

Q. 25 In recombinant DNA Technology, plasmid vector is cleaved by

a) Modified DNA ligase

b) A heated alkaline solution

c) The same enzyme that cleaves the donor DNA

d) The different enzyme than that cleaves the donor DNA

Ans: c

Q. 26 Bolivar and Rodriguez constructed which vector?  
a) Yip7  
b) R6-5  
c) pUC8  
d) pBR322

Ans: d

Q. 27 It is required to distinguish between the cells that have taken up the vector and that have not. It is done by using \_\_\_\_\_\_\_\_\_\_  
a) multiple cloning site  
b) origin of replication  
c) high copy number  
d) selectable marker

Ans:d

Q. 28 If high copy number is there, the replication is called as \_\_\_\_\_\_ and if low copy number is there the replication is called as \_\_\_\_\_\_  
a) stringent, relaxed  
b) relaxed, stringent  
c) relaxed, relaxed  
d) stringent, stringent

Ans: b

Q. 29 Which vector is used for the plant cloning?

a) pBR 322

b) Lambda Phage

c) pUC 18

d) Ti Plasmid

Ans: d

Q. 30 Joining of two cohesive ends is done by\_\_\_

a) Helicase

b) Ligase

c) Endonuclease

d) Polymerase

Ans:b

Q. 31 Electroporation is also used for taking up the DNA by the cells. It works by \_\_\_\_\_\_\_\_\_\_\_\_  
a) inserting the DNA into the cells via an electric shock  
b) increased efficiency than both natural and chemical methods  
c) causing the least amount of damage in comparison to other methods  
d) decreased efficiency than both natural and chemical methods

Ans: a

Q.32 Transformation of DNA by chemical method is performed by \_\_\_\_\_\_

a) Calcium-phosphate precipitation

b) Electroporation.

e) Biolistics

d) None of the above

Ans: a

Q. 33 During insertional inactivation, the presence of a chromogenic substrate gives blue colored colonies if the plasmid in the bacteria does not have the insert. The blue color is produced by the enzyme.

a) α- Glucoside

b) Restriction endonuclease

c) β –galactosidase

d) Taq polymerase

Ans : c

Q.34 Which DNA is restricted to making a genomic library?  
a) Genomic  
b) Plasmid  
c) Phage  
d) Plant

Ans: a

Q. 35 To express eukaryotic gene in prokaryotes the library used is

a) c DNA library

b) Genomic library

c) b DNA library

d) z DNA library

Ans: a

Q. 36 The correct sequence of different steps of polymerase chain reaction is

a) annealing- denaturation- extentsion

b) denaturation-extension-annealing

c)denaturation-annealing-extension

d) extension-denaturation-anneanling

Ans: c

Q. 37 Which of the following is required to perform polymerase chain reaction?

a) Primers, dNTPs and DNA polymerase

b) DNA, CaCl2 and nuclease

c) Mg+2, DNA

d) Both a and c

Ans : d

Q. 38 Polymerase Chain Reaction technique was invented by\_\_\_

a)Temin and Baltimore

b) Watson Crick

c) Kary Mullis

d) Non of the above

Ans: c

Q. 39 During recombinant Bt Cotton development by r DNA technology, which gene was used ?

a) nif gene

b) cry gene

c) insulin gene

d) none of the above

Ans :b

Q. 40 In application of r DNA technology, DNA fingerprinting includes the technique

a) RAPD

b) Gram staining

c) BOD

d) COD

Ans: a