1. Polysomes do not contain:

A. Protein B. DNA

C. rnRNA D. tRNA

2. Which of the following are the adapter molecules translating the code words into amino acid sequence?

A. tRNA B. mRNA

C. DNA D. rRNA

3. The rough endoplasmic reticulum is the factory of:

A. Ribosomes B. Polyribosomes

C. Histones D. None of the above

4. The formation of a peptide bond during the elongation step of a protein synthesis results in the splitting of how many energy bonds?

A.1 B.2

C.3 D.4

5. Translocase in an enzyme required in the process of:

A. DNA replication B. RNA synthesis

C. Initation of 1)Ioteifl synthesis D. Elongation of peptide

6. Nonsense codon brings about:

A. Amino acid activation B. Initation of protein

C. Termination of protein synthesis D. Elongation of polypeptide chains

7. Which of the following genes of the E.coli Lac Operon codes for a constitutive protein?

A. The a gene B. The i gene

C. The c gene D. The z gene

8. In the process of transcription the flow of genetic information is from:

A. DNA to DNA B. DNA to protein

C. RNAt0 protein D. DNA to RNA

9. The anticodon region is an important part of the structure of:

A. rRNA B. tRNA

C. rnRNA D. hnRNA

10. The region of the Lac operon which must be free (unbound) for structural gene transcription to occur is:

A. The operator locus B. The promoter site

C. The a gene D. The i gene

11. Another name for reverse transcriptase is:

A. DNA dependent DNA polymerase

B. DNA dependent RNA polymerase

C. RNA dependent DNA polymerase

D. RNA dependent RNA polyrnerase

12. In the Lac operon which of the following is a protein?

A. Operator B. Repressor

C. Inducer D. Promoter

13. Degeneracy of the genetic code denotes the existence of:

A. Base triplets that do not code for any amino acid

B. Codons consisting of only two bases

C. Codons that include one or more unusual bases

D., Multiple codons for a single amino acid

14. The normal function of restriction endonuclease is to:

A. Excise introns from hnRNA

B. Polymerize nucleotides to form RNA

C. Remove pro te ins from Okaza ki fragment

D. Protect bacteria 1iom foreign DNA

15. In contrast to eukaryotic mRNA prokaryotic mRNA is characterized by:

A. Having 7 methyl guanosine triphosphate at the 5 end

B. Being polycistronic

C. Being only monocystronic

D. Being synthesized with introns

16. DNA ligase of E.coli requires which of the following cofactors?

A. NAD B. NAD

C. NADP D. NADH + H

17. Which of the following is transcribed during repression?

A. Structural gene B. Promoter gene

C. Regulator gene D. Operator gene

18. mRNA is a complementary copy of:

A. 5'-3 strand of DNA

B. 3'-5 strand of DNA

C. Antisense strand of DNA

D. tRNA

19. Synthesis of RNA molecule is terminated by a signal which is recognized by:

A. α factor B.β-factor

C.δ factor D.þfactor

20. The binding of prokaryotic DNA dependent RNA polymerase to promoter sites of genes is inhibited by the antibiotic:

A. Streptomycin B. Rifampicin

C. Aureornycin D. Terramycin.

21. In E.coli, the chain initating amino acid in protein synthesis is of:

A. N-formyl methionine B. Methioine

C. Serine D. Cysteine

22. Amanitin, the mushroom poison inhibits:

A. Glycoprotein synthesis

B. ATP synthesis

C. DNA synthesis

D. mRNA synthesis

23. How many high energy phosphate bond equivalents are required for amino acid activation in protein synthesis?

A. One B. Two

C. Three D. Four

24. Translation results in formation of:

A. mRNA B. tRNA

C. DNA D. Protein molecule

25. Elongation of a peptide chain involves all the following except:

A. mRNA B. GTP

C. Formyl met. tRNA D. Tn, Ts and G factors

26. The rho factor is involved:

A. To increase the rate of RNA synthesis

B. In binding catabolite repressor to promoter region

C. In proper termination of transcription

D. To allow proper initation of transcription

27. In the biosynthesis of C-DNA the joining enzyme ligase requires:

A. GTP B. ATP

C. CTP D. UTP

28. The plasmids which contain the DNA sequences, so called as cos sites are:

A. Heteroplasmid B. Plasmici phage

C. Cosmids D. Chimeric phage

29. Addition of additional length of base pairs in DNA is called as:

A. Insei-tion B. Dispersion

C. Addition D. Deletion

30. A method for transferring DNA from an agarose gel to nitrocellulose filter on which the DNA can be detected by a suitable probe is called as:

A. Western blot B. Northern blot

C. Southern blot D. None of the above

Answers

1.b	**2.a**	**3.b**	**4.b**	**5.d**	**6.c**	**7.b**	**8.b**	**9.b**
10. a	**11. c**	**12. b**	**13. d**	**14. d**	**15. a**	**16. B**	**17. c**	**18. b**
19.d	**20.b**	**21.a**	**22.d**	**23.b**	**24.d**	**25.c**	**26.c**	**27.b**
28.c	**29.a**	**30.c**						

Fill in the blanks

1. The adapter molecules translating the code words into the amino acids require the-------molecules.

2. The process by which the cell translate information by the machinery from the nucleotide sequence of an mRNA into the sequence of amino acids of the corresponding specific ---- is said to be------.

3. The rough endoplasmic reticulum is the factory of--------.

4. Code words consisting of 2 nucleotides each can provide for only-------specific code words.

5. Each code word termed a ------- consists of a sequence of ----------nucleotides.

6. 64 triplet codes in mRNA with 4 nucleotides are to code for ---------- amino acid and three codons do not code for specific amino acid and these have been termed ----------

7. Only a single amino acid is indicated for any specific codon, the genetic code is---------- -

8. Once the coding is started at a specific code there is no---------- between codons.

9. Amino acids are activated by the enzyme —— in the presence of the coenzyme —.

10. The binding of the mRNA to the 90 S ribosomal subunit requires the presence of--------

11. The initiation factor is a ------- factor.

12. The complex formed by the anticodon of RNA and IF-I attaches the 60 S rihosomal subunits with the release of————,

13. The complete ribosome contains two sites —— site and ____- site on the mRNA.

14. During the process of initiation the complete---------- ribosome is formed.

15. —------ forms a complex with ——-— and the entering amino acyl RNA.

16. The amino group of the new amino acyl tRNA at the A site combines with the carboxyl group of the peptidyl tRNA occupying the P site in presence of —-— the —. - ribosomal subunits.

17. The newly formed peptidyl tRNA at the A site is translocated into the vacated P site by ----------— and ----------—.

18. After multiple cycles o elongation the —--—- coclon of mRNA appears in the --------- site.

19. The releasing factor hydrolyzes the bond between (he peptide and the --------— occupying the ---------- site.

20. On hydrolysis and release the 80 S ribosome dissociate into its --------- and —--- subunits which are then recycled.

21. The releasing factor are----------

22. The antibiotic —— has structural similarity with that of tyrosinyl -RNA and is incorporated via the A site on the ribosome.

23. Since EF-2 is inactivated by ——— and thereby inhibits mammalian protein synthesis.

24. A single ribosorne is capable of translating about----------—codons in ---------- seconds into a protein with a molecule weight of 40,000.

25. There are only two types of gene regulation ------— regulation and------- regulation.

26. A double negative has the effect of acting as a----------

27. The gene is the smallest segment of the---------- molecule containing about ------- base pairs.

28. When a pair carries genes with the same pair of characters, then the individual is said to be----------

29. When the two allelic pairs are different, the individual is----------

30. Lac operon consists of ------— and -——----.

31. The regulator gene induces the synthesis of protein macromolecules called----------

32. The operon becomes active because the repressor system is itself inactivated the phenomenon is said to be----------

33. The operator locus is a region of double stranded DNA of --------- base pairs long with a 2 fold rotational symmetiy in a region that is ---------- base pair long.

34. The operator locus lies between the at which the DNA dependent RNA polyinerase attaches to commence transcription and the beginning of the —----— gene.

35. Normally ---------- repressor molecules are piesent and one or two operator loci per cell are also present.

Fill in the blanks

1. tRNA	**2. Protein; Translation**	**3. Polyribosomes**	**4. 16**
5. Codon; 3	**6. 20; Nonsense codes**	**7. Unambiguous**	**8. Punctuation**
9. Aminoacyl tRNA synthase; ATP	**10. IF- 3**		**11. Protein**
12. IF-i; IF-2; IF-3	**13. P;A**		**14. 80S**
15. EF1;GTP	**16. Peptidyl transferase, 60 S**		**17. EF-2; GTP**
18. Nonsense; A	**19. tRNA; P**		**20. 40 S; 60 S**
21. Proteins	**22. Puromycin**		**23. Diphtheria toxin**
24.400; 10	**25. Positive; Negative**		**26.Positive**
27. DNA; 600	**28.Homozygous**		**29. Heterozygous**
30. Structural gene; operator gene	**31.Repressor**		**32. Depression**
33.27; 21	**34. Promoter site; 2**		**35.20 -40**

True or False

1. The genetic code is the code word existing for each amino acids.

2. Mathaei and Nirenberg coined word codon.

3. There are marked punctuation's during reading of codon.

4. Amino acid RNA synthetases are responsible for recognition and attachment of amino acids.

5. The fIrst codon in protein synthesis is AUG.

6. During initiation step, 80 S ribosome is formed.

7. Antibiotic aureomycin has structural similarity with that to tyrosinyl RNA.

8. Streptomycin interferes with the binding of RNA to ribosomes and inhibits the initiation process.

9. The gene is a unit of genetic information.

10. The operator locus lies between the promotes site.

11. Glucocorticoids regulate gene expression.

12. The change in the base sequence DNA results in mutation

13. The rate of mutation is decreased by viruses, chemicals, UV light etc.

14. Restriction enzymes, recognize and cleaves a specific double stranded DNA sequence.

15. A cloning allows for the production of large number of identical DNA molecules.

16. Bacterial plasmids are larger. oval, single stranded DNA molecules.

17. Plasmids have several properties that makes them useful as cloning vectors.

18. Phages usally have circular DNA.

19. Cosmids are plasmids that contain the RNA sequence.

20. c DNA probes are used to detect DNA fragments.

True or False

1. True	**2. True**	**3. False**	**4. False**	**5. True**	**6. False**
7. False	**8. True**	**9. True**	**10. True**	**11. True**	**12. True**
13. False	**14. True**	**15. True**	**16. False**	**17. True**	**18. False**
19.. False	**20. True**				