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SOLUTION OF NEET PHASE-2/ AIPMT - 2016

(HELD ON 24th JULY SUNDAY 2016)

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(All Code - A/P/W, B/Q/X, C/R/Y, D/S/Z)

SOLUTION [BIOLOGY]

1. Which one of the following generates new genetic combinations leading to variation?

- (1) Sexual reproduction
- (2) Nucellar polyembryony
- (3) Vegetative reproduction
- (4) Parthenogenesis

Sol.(1) New genetic combination develops after sexual reproduction due to following reasons

- (1) Crossing over during gamete formation
- (2) Chance combination of gametic fusion

2. Match **Column-I** with **Column-II** and select the correct option using the codes given below :

Column-I	Column-II
a. Pistils fused together	(i) Gametogenesis
b. Formation of gametes	(ii) Pistillate
c. Hyphae of higher Ascomycetes	(iii) Syncarpous
d. Unisexual female flower	(iv) Dikaryotic

Code :

	a	b	c	d
(1)	(i)	(ii)	(iv)	(iii)
(2)	(iii)	(i)	(iv)	(ii)
(3)	(iv)	(iii)	(i)	(ii)
(4)	(ii)	(i)	(iv)	(iii)

Sol.(2)

3. In majority of angiosperms :

- (1) reduction division occurs in the megaspore mother cells
- (2) a small central cell is present in the embryo sac

- (3) egg has a filiform apparatus
- (4) there are numerous antipodal cells

Sol.(1)

4. Pollination in water hyacinth and water lily is brought about by the agency of

- (1) birds
- (2) bats
- (3) water
- (4) insects or wind

Sol.(4)

5. The ovule of an angiosperm is technically equivalent to

- (1) megaspore mother cell
- (2) megaspore
- (3) megasporangium
- (4) megasporophyll

Sol.(3)

6. Taylor conducted the experiments to prove semiconservative mode of chromosome replication on :

- (1) Drosophila melanogaster
- (2) E. coli
- (3) Vinca rosea
- (4) Vicia faba

Sol.(4)

7. The mechanism that causes a gene to move from one linkage group to another is called

- (1) translocation
- (2) crossing-over
- (3) inversion
- (4) duplication

Sol.(1)

8. The equivalent of a structural gene is

- (1) operon
- (2) recon
- (3) muton
- (4) cistron

Sol.(4)

9. A true breeding plant is
 (1) near homozygous and produces offspring of its own kind
 (2) always homozygous recessive in its genetic constitution
 (3) one that is able to breed on its own
 (4) produced due to cross-pollination among unrelated plants

Sol.(1)

10. Which of the following rRNAs acts as structural RNA as well as ribozyme in bacteria?
 (1) 23 S rRNA (2) 5.8 S rRNA
 (3) 5 S rRNA (4) 18 S rRNA

Sol.(1)

11. Stirred-tank bioreactors have been designed for :
 (1) availability of oxygen throughout the process
 (2) ensuring anaerobic conditions in the culture vessel
 (3) purification of product
 (4) addition of preservatives to the product

Sol.(1)

12. A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using
 (1) polymerase III (2) ligase
 (3) Eco RI (4) Taq polymerase

Sol.(2) Ligase are the enzymes used to join substrates. Here in case of DNA T₄ DNA ligase is used.

13. Which of the following is **not** a component of downstream processing?
 (1) Preservation (2) Expression
 (3) Separation (4) Purification

Sol.(2) Expression of recombinant DNA is parts of upstream processing.

14. Which of the following restriction enzymes produces blunt ends?
 (1) Xho I (2) Hind III
 (3) Sal I (4) Eco RV

Sol.(4) Eco RV has restriction sequence

5' – GAT ATC – 3'

3' – CTA TAG – 5'

15. Which kind of therapy was given in 1990 to a four-year-old girl with adenosine deaminase (ADA) deficiency ?

- (1) Immunotherapy (2) Radiation therapy
 (3) Gene therapy (4) Chemotherapy

Sol.(3)

16. How many hot spots of biodiversity in the world have been identified till date by Norman Myers?
 (1) 34 (2) 43
 (3) 17 (4) 25

Sol.(1)

17. The primary producers of the deep-sea hydrothermal vent ecosystem are :
 (1) blue-green algae
 (2) coral reefs
 (3) green algae
 (4) chemosynthetic bacteria

Sol.(4)

18. Which of the following is **correct** for *r*-selected species ?
 (1) Small number of progeny with small size
 (2) Small number of progeny with large size
 (3) Large number of progeny with small size
 (4) Large number of progeny with large size

Sol.(3)

19. If '+' sign is assigned to beneficial interaction, '-' sign to detrimental and 'O' sign to neutral interaction, then the population interaction represented by '+' '-' refers to :
 (1) commensalism (2) parasitism
 (3) mutualism (4) amensalism

Sol.(2) Parasitism +, -

Mutualism +, +

Amensalism 0, -

Commensalism +, 0

20. Which of the following is **correctly** matched?
 (1) *Parthenium hysterophorus*-Threat to biodiversity

(2) Stratification-Population

(3) Aerenchyma-Opuntia

(4) Age pyramid-Biome

Sol.(1) (1) Stratification : Structural component of ecosystem

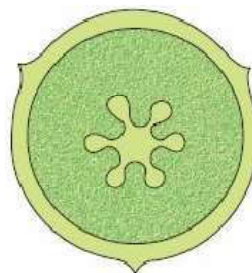
(2) Aerenchyma : Feature of hydrophytes

(3) Age pyramid : Food chain

(4) *Parthenium hysterophorus* : Exotic species do not that allow the growth of other plants near it.

21. Red List contains data or information on
 (1) **threatened species**
 (2) marine vertebrates only
 (3) all economically important plants
 (4) plants whose products are in international trade
- Sol.(1)** Red list of red data blood IUCN (New name WCU) involve threatened species of plants & animals.
22. Which one of the following is wrong for fungi?
 (1) They are heterotrophic.
 (2) They are both unicellular and multicellular
 (3) They are eukaryotic.
 (4) **All fungi possess a purely cellulosic cell wall**
- Sol.(4)** In fungi, cell wall is usually composed of Chitin. Cellulosic cell wall is found in oomycetes of phycmycetes in fungi.
23. Methanogens belong to :
 (1) Dinooilagellates (2) Slime moulds
 (3) Eubacteria (4) **Archaeobacteria**
- Sol.(4)** Biogas producing, obligate anaerobe, methanogens are type of Archaeobacteria.
24. Select the **wrong** statement.
 (1) Diatoms are chief producers in the oceans.
 (2) Diatoms are microscopic and float passively in Water.
 (3) **The walls of diatoms are easily destructible.**
 (4) Diatomaceous earth' is formed by the cell walls of diatoms.
- Sol.(3)** The wall of diatoms contain cellulose & Silica. It is called frustule. It is non-degradoble. After death it is deposited at the bottom in water & form diatomous earth.
25. The label of a herbarium sheet **does not** carry information on
 (1) local names (2) **height of the plant**
 (3) date of collection (4) name of collector
- Sol.(2)**
26. Conifers are adapted to tolerate extreme environmental conditions because of
 (1) **thick cuticle**
 (2) presence of vessels
 (3) broad hardy leaves
 (4) superficial stomata
- Sol.(1)** Presence of thick cuticle, presence of sunken stomata and needle like leaves are xerophytic

- adaptations of conifers for tolerating extreme environmental conditions.
27. Which one of the following statements is **wrong**?
 (1) Agar-agar is obtained from *Gelidium* and *Gracilaria*.
 (2) *Laminaria* and *Sargassum* are used as food.
 (3) Algae increase the level of dissolved oxygen in the immediate environment.
 (4) **Algin is obtained from red algae, and carrageenan from brown algae.**
- Sol.(4)** Algin is obtained from Laminaria & Fucus –Brown algae while Carrageenan from chondrus crispes – Red alage
28. The term 'polyadelphous' is related to
 (1) corolla (2) Calyx
 (3) gynoecium (4) **androecium**
- Sol.(4)** If filaments of Androecium are joined to form more than two groups but their Anthers separate, it is called polyadelphous Eg : *Citrus*.
29. How many plants among Indigofera, Sesbania, Salvia, Allium, Aloe, mustard, groundnut, radish, gram and turnip have stamens with different lengths in their flowers ?
 (1) Five (2) Six
 (3) Three (4) **Four**
- Sol.(4)** *Salvia*, *Mustard*, *Radish* and *turnip* have stamens with different lengths in their flowers.
30. Radial symmetry is found in the flowers of
 (1) *Pisum* (2) *Cassia*
 (3) ***Brassica*** (4) *Trifolium*
- Sol.(3)** *Cassia*, *Trifolium* & *Pisum* have zygomorphic flowers while Brassica has Actinomorphic flowers (Radial symmetry)
31. Free-central placentation is found in
 (1) *Brassica* (2) *Citrus*
 (3) ***Dianthus*** (4) *Argemone*
- Sol.(3)** Free central placentation is found in *Dianthus*.



32. Cortex is the region found between
 (1) endodermis and pith
 (2) endodermis and vascular bundle
 (3) epidermis and stele
 (4) pericycle and endodermis
- Sol.(3)** Sequence from outside to inside in T.S. of stem is epidermis, hypodermis, cortex, endodermis, stele (pericycle + vascular tissues + pith) hence cortex is present between epidermis & stele.
33. The balloon-shaped structures called tyloses
 (1) are extensions of xylem parenchyma cells into vessels
 (2) are linked to the ascent of sap through xylem vessels
 (3) originate in the lumen of vessels
 (4) characterize the sapwood
- Sol.(1)** Balloon like parenchymatous ingrowth in vessels called tyloses which inhibits transportation of water & minerals in xylem.
34. A non-proteinaceous enzyme is
 (1) ligase (2) deoxyribonuclease
 (3) lysozyme (4) ribozyme
- Sol.(4)** Ribozyme is non proteinaceous enzyme as it is 23 rRNA acts as a catalyst during protein synthesis.
35. Select the mismatch
 (1) Protists-Eukaryotes
 (2) Methanogens-Prokaryotes
 (3) Gas vacuoles-Green bacteria
 (4) Large central vacuoles-Animal cells
- Sol.(4)** Animal cells do not contain large central vacuole, their vacuole is poorly developed or absent.
36. Select the wrong statement.
 (1) Cyanobacteria lack flagellated cells.
 (2) *Mycoplasma* is a wall-less microorganism.
 (3) Bacterial cell wall is made up of peptidoglycan.
 (4) Pili and fimbriae are mainly involved in motility of bacterial cells
- Sol.(4)** Motility is performed by flagella only in bacterial cells while fimbriae provide attachment to base and pili forms conjugation tube during conjugation.
37. A cell organelle containing hydrolytic enzymes is
 (1) ribosome (2) mesosome
 (3) lysosome (4) microsome
- Sol.(3)** Hydrolytic enzyme containing vesicle is called lysosome.
38. During cell growth, DNA synthesis takes place in
 (1) G₂ phase (2) M phase
 (3) S phase (4) G₁ phase
- Sol.(3)** DNA Polymerase enzyme is synthesized in G₁ phase but activates in 'S' phase hence DNA replication takes place in 'S' phase in the presence of DNA polymerase.
39. Which of the following biomolecules is common to respiration-mediated breakdown of fats, carbohydrates and proteins?
 (1) Pyruvic acid
 (2) Acetyl CoA
 (3) Glucose-6-phosphate
 (4) Fructose 1,6-bisphosphate
- Sol.(2)** Acetyl CoA is common intermediate of fats, carbohydrates & proteins during aerobic respiration.
40. A few drops of sap were collected by cutting across a plant stem by a suitable method. The sap was tested chemically. Which one of the following test results indicates that it is phloem sap?
 (1) Low refractive index (2) Absence of sugar
 (3) Acidic (4) Alkaline
- Sol.(4)** Phloem sap is alkaline due to actively pumping of protons from companion cells to the outer cells.
41. You are given a tissue with its potential for differentiation in an artificial culture. Which of the following pairs of hormones would you add to the medium to secure shoots as well as roots?
 (1) Auxin and abscisic acid
 (2) Gibberellin and abscisic acid
 (3) IAA and gibberellin
 (4) Auxin and cytokinin
- Sol.(4)** Auxin and cytokinin ratio regulates the growth of root & shoot as low concentration of Auxin and cytokinin promotes shoot growth while higher ratio promotes root growth.
42. Phytochrome is a
 (1) lipoprotein (2) chromoprotein
 (3) flavoprotein (4) glycoprotein
- Sol.(2)** Phytochromes are chromoproteins.

43. Which is essential for the growth of root tip?
 (1) Ca (2) Mn
 (3) Zn (4) Fe
- Sol.(1)** Ca promotes the growth of root tip.
44. The process which makes major difference between C_3 and C_4 plants is
 (1) photorespiration (2) respiration
 (3) glycolysis (4) Calvin cycle
- Sol.(1)** Photorespiration differentiates C_3 plants from C_4 plants due to having high CO_2 concentration around RuBP in bundle sheath cells.
45. Which one of the following statements is **not** correct?
 (1) In potato, banana and ginger, the plantlets arise from the internodes present in the modified stem.
 (2) Water hyacinth, growing in the standing water, drains oxygen from water that leads to the death of fishes.
 (3) Offspring produced by the asexual reproduction are called clone.
 (4) Microscopic, motile asexual reproductive structures are called zoospores.
- Sol.(1)** Plantlet always arise from nodes of stem or modified stem.
46. The part of nephron involved in active reabsorption of sodium is
 (1) Bowman's capsule
 (2) descending limb of Henle's loop
 (3) distal convoluted tubule
 (4) proximal convoluted tubule
- Sol.(4)** The part of nephron involved in active reabsorption of sodium is proximal convoluted tubule.
47. Which of the following is hormone releasing IUD?
 (1) Lippes loop (2) Cu7
 (3) LNG-20 (4) Multiload 375
- Sol.(3)** LNG-20 is hormone releasing IUD clotting factors.
48. Which of the following is **incorrect** regarding vasectomy?
 (1) Vasa deferentia is cut and tied
 (2) Irreversible sterility
 (3) No sperm occurs in seminal fluid
 (4) No sperm occurs in epididymis
- Sol.(4)** No sperm occurs in epididymis.
49. Embryo with more than 16 blastomeres formed due to in *vitro* fertilization is transferred into :
 (1) fimbriae (2) cervix

- (3) uterus (4) fallopian tube
- Sol.(3)** Embryo with more than 16 blastomeres formed due to in *vitro* fertilization is transferred into uterus.
50. Which of the following depicts the **correct** pathway of transport of sperms?
 (1) Rete testis → Vas deferens → Efferent ductules → Epididymis
 (2) Efferent ductules → Rete testis → Vas deferens → Epididymis
 (3) Rete testis → Efferent ductules → Epididymis → Vas deferens
 (4) Rete testis → Epididymis → Efferent ductules → Vas deferens
- Sol.(3)** The **correct** pathway of transport of sperms is Rete testis → Efferent ductules → Epididymis → Vas deferens
51. Match **Column-I** with **Column-II** and select the correct option using the codes given below :
- | Column-I | Column-II |
|------------------|---------------------------------|
| a. Mons pubis | (i) Embryo formation |
| b. Antrum | (ii) Sperm |
| c. Trophoctoderm | (iii) Female external genitalia |
| d. Nebenkern | (iv) Graafian follicle |
- Codes :**
- | | a | b | c | d |
|-----|----------|----------|----------|----------|
| (1) | (iii) | (i) | (iv) | (ii) |
| (2) | (i) | (iv) | (iii) | (ii) |
| (3) | (iii) | (iv) | (ii) | (i) |
| (4) | (iii) | (iv) | (i) | (ii) |
- Sol.(4)**
- | Column-I | Column-II |
|------------------|-----------------------------|
| a. Mons pubis | - Female external genitalia |
| b. Antrum | - Graafian follicle |
| c. Trophoctoderm | - Embryo formation |
| d. Nebenkern | - Sperm |
52. Several hormones like hCG, hPL, estrogen progesterone are produced by
 (1) fallopian tube (2) pituitary
 (3) ovary (4) placenta
- Sol.(4)** Colour blind man Normal homozygous women
- | | |
|------------------|----|
| X ^c Y | XX |
|------------------|----|
- Genotype of son-XY - normal vision
 Son receives Y chromosome from father and X chromosomes from mother.

53. If a colour-blind man marries a woman who is homozygous for normal colour vision, the probability of their son being colour-blind is

- (1) 0.75 (2) 1
(3) 0 (4) 0.5

Sol.(3)

54. Genetic drift operates in

- (1) non-reproductive population
(2) slow reproductive population
(3) small isolated population
(4) large isolated population

Sol.(3) Genetic drift operates in small isolated population.

55. In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by

- (1) pq (2) q^2
(3) p^2 (4) $2pq$

Sol.(4) In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by $2pq$.

56. The chronological order of human evolution from early to the recent is :

- (1) Ramapithecus → Homo habilis → Australopithecus → Homo erectus
(2) Australopithecus → Homo habilis → Ramapithecus → Homo habilis
(3) Australopithecus → Ramapithecus → Homo habilis → Homo erectus
(4) Ramapithecus → Australopithecus → Homo habilis → Homo erectus

Sol.(4) The chronological order of human evolution from early to the recent is

Ramapithecus → Australopithecus → Homo habilis → Homo erectus

57. Which of the following is the **correct** sequence of events in the origin of life?

- I. Formation of protobionts
II. Synthesis of organic monomers
III. Synthesis of organic polymers
IV. Formation of DNA-based genetic systems
(1) II, III, I, IV (2) II, III, IV, I
(3) I, II, III, IV (4) I, III, II, IV

Sol.(1) The correct sequence of events in the origin of life is

Synthesis of organic monomers - Synthesis of organic polymers - Formation of protobionts - Formation of DNA - based genetic systems.

58. A molecule that can act as a genetic material must fulfill the traits given below, except

- (1) it should be unstable structurally and chemically
(2) it should provide the scope for slow changes that are required for evolution
(3) it should be able to express itself in the form of 'Mendelian characters'
(4) it should be able to generate its replica

Sol.(1) Genetic material should be stable (chemically) otherwise its expression will change leading to loss in several metabolic functions or inconsistency in expression.

59. DNA-dependent RNA polymerase catalyzes transcription on one strand of the DNA which is called the

- (1) alpha strand (2) antistrand
(3) template strand (4) coding strand

Sol.(3) The strand of DNA on which RNA Polymerase binds to perform transcription is called template strand.

60. Interspecific hybridization is the mating of

- (1) superior males and females of different breeds
(2) more closely related individuals within same breed for 4-6 generations
(3) animals within same breed without having common ancestors
(4) two different related species

Sol.(4)

61. Which of the following is **correct** regarding AIDS causative agent HIV?

- (1) HIV is unenveloped retrovirus.
(2) HIV does not escape but attacks the acquired immune response.
(3) HIV is enveloped virus containing one molecule of single-stranded RNA and one molecule of reverse transcriptase.
(4) HIV is enveloped virus that contains two identical molecules of single-stranded RNA and two molecules of reverse transcriptase.

Sol.(4) HIV attacks helper T cells and not try to hide from them.

62. Among the following edible fishes, which one is a marine fish having rich source of omega-3 fatty acids?

- (1) Mrigala (2) Mackerel
(3) Mystus (4) Mangur

Sol.(2)

63. Match **Column-I** with **Column-II** and select the correct option using the codes given below :

Column-I	Column-II
a. Citric acid	(i) <i>Trichoderma</i>
b. Cyclosporina A	(ii) <i>Clostridium</i>
c. Statins	(iii) <i>Aspergillus</i>
d. Butyric acid	(iv) <i>Monascus</i>

Codes :

	a	b	c	d
(1)	(i)	(iv)	(ii)	(iii)
(2)	(iii)	(iv)	(i)	(ii)
(3)	(iii)	(i)	(ii)	(iv)
(4)	(iii)	(i)	(iv)	(ii)

Sol.(4)

64. Biochemical Oxygen Demand (BOD) may not be a good index for pollution for water bodies receiving effluents from

- (1) petroleum industry (2) sugar industry
(3) domestic sewage (4) dairy industry

Sol.(1) BOD is measure of Oxygen required by microbes to remove biodegradable chemicals.

65. The principle of competitive exclusion was stated by

- (1) MacArthur (2) Verhulst and Pearl
(3) C. Darwin (4) G. F. Gause

Sol.(4)

66. Which of the following National Parks is home to the famous musk deer or hangul?

- (1) Eaglenest Wildlife Sanctuary, Arunachal Pradesh
(2) Dachigam National Park, Jammu & Kashmir
(3) Keibul Lamjao National Park, Manipur
(4) Bandhavgarh National Park, Madhya Pradesh

Sol.(2)

67. A lake which is rich in organic waste may result in

- (1) increased population of fish due to lots of nutrients
(2) mortality of fish due to lack of oxygen

(3) increased population of aquatic organisms due to minerals

(4) drying of the lake due to algal bloom

Sol.(2) Lake with large amount of organic waste will increase BOD of water since microbes will use more Dissolved Oxygen to degrade organic matter.

68. The highest DDT concentration in aquatic food chain shall occur in

- (1) crab (2) eel
(3) phytoplankton (4) seagull

Sol.(4) Bioamplification of nondegradable chemicals is seen as we move upwards in trophic level and thus in Sea gull (bird) level of DDT will be maximum.

69. Which of the following sets of diseases is caused by bacteria?

- (1) Tetanus and mumps
(2) Herpes and influenza
(3) Cholera and tetanus
(4) Typhoid and smallpox

Sol.(3)

70. Match **Column-I** with **Column-II** for housefly classification and select the correct option using the codes given below :

Column-I	Column-II
a. Family	(i) diptera
b. Order	(ii) Arthropoda
c. Class	(iii) Muscidae
d. Phylum	(iv) Insecta

Codes :

	a	b	c	d
(1)	(iv)	(iii)	(ii)	(i)
(2)	(iv)	(ii)	(i)	(iii)
(3)	(iii)	(i)	(iv)	(ii)
(4)	(iii)	(ii)	(iv)	(i)

Sol.(3)

71. Chose the correct statement .

- (1) All reptiles have a three-chambered heart.
(2) All Pisces have gills covered by an operculum
(3) All mammals are viviparous
(4) All cyclostomes do not possess jaws and paired fins

Sol.(4)

72. Study the four statements (A-D) given below and select the two correct ones out of them :

- A. Definition of biological species was given by Ernst Mayr.
- B. Photoperiod does not affect reproduction in plants
- C. Binomial nomenclature system was given by R.H. Whittaker
- D. In unicellular organisms, reproduction is synonymous with growth.

The two correct statements are

- (1) A and D
- (2) A and B
- (3) B and C
- (4) C and D

Sol.(1)

73. In male cockroaches, sperms are stored in which part of the reproductive system ?

- (1) Testes
- (2) Vas deferens
- (3) Seminal vesicles
- (4) Mushroom glands

Sol.(3)

74. Smooth muscles are

- (1) involuntary, cylindrical, striated
- (2) voluntary, spindle-shaped, uninucleate
- (3) involuntary, fusiform, non-striated
- (4) voluntary, multinucleate, cylindrical

Sol.(3)

75. Oxidative phosphorylation is

- (1) addition of phosphate group to ATP
- (2) formation of ATP by energy released from electrons removed during substrate electrons oxidation
- (3) formation of ATP by transfer of phosphate group from a substrate to ADP
- (4) oxidation of phosphate group in ATP

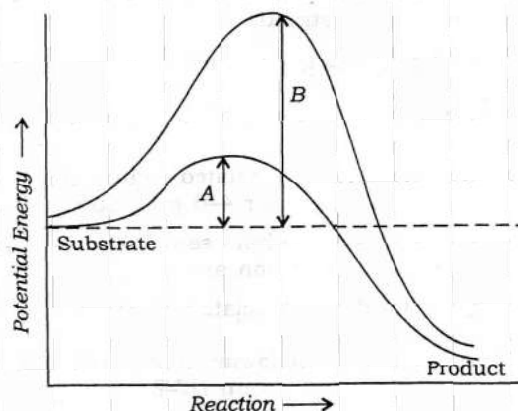
Sol.(2) Oxidative phosphorylation occurs when $\text{NADH}^+ + \text{H}^+$ or FADH_2 are oxidized and their electron enters in ETC creating proton gradient which finally produce ATP in $F_0 - F_1$ particle.

76. Which of the following is the least likely to be involved in stabilizing the three-dimensional folding of most proteins ?

- (1) Hydrophobic interaction
- (2) Ester bonds
- (3) Hydrogen bonds
- (4) Electrostatic interaction

Sol.(2) Ester bonds are formed in nucleic acids and lipids, but not proteins.

77. Which of the following describes the given graph correctly ?



- (1) Endothermic reaction with energy A in absence of enzyme and B in presence of enzyme
- (2) Exothermic reaction with energy A in absence of enzyme and B in presence of enzyme
- (3) Endothermic reaction with energy A in presence of enzyme and B in absence of enzyme
- (4) Exothermic reaction with energy A in presence of enzyme and B in absence of enzyme

Sol.(4)

78. When cell has stalled DNA replication fork, which checkpoint should be predominantly activated ?

- (1) M
- (2) Both G_2 / M and M
- (3) G_1 / S
- (4) G_2 / M

Sol.(3) G_2 / M check point ensures that DNA Replication is complete and no error is left.

79. Match the stage of meiosis in Column - I to their characteristic feature in column - II and select the correct option using the codes given below :

Column - I	Column - II
a. Pachytene	(i) Pairing of homologous
b. Metaphase I	(ii) Terminalization of chiasmata
c. Diakinesis	(iii) Crossing-over takes place
d. Zygotene	(iv) Crossing align at equatorial plate

Codes :

	a	b	c	d
(1)	(ii)	(iv)	(iii)	(i)
(2)	(iv)	(iii)	(ii)	(i)
(3)	(iii)	(iv)	(ii)	(i)
(4)	(i)	(iv)	(ii)	(iii)

Sol.(3)

80. Which hormones do stimulate the production of pancreatic of pancreatic juice and bicarbonate?
 (1) Cholecystokinin and secretin
 (2) Insulin and glucagon
 (3) Angiotensin and epinephrine
 (4) Gastrin and insulin
- Sol.(1)** Pancreatic juice rich in enzymes is secreted under influence of cholecystokinin, while pancreatic juice rich in bicarbonates is secreted under influence of secretin.
81. The partial pressure of oxygen in the alveoli of the lungs is
 (1) less than that in the blood
 (2) less than that of carbon dioxide
 (3) equal to that in the blood
 (4) more than that in the blood
- Sol.(4)** pO_2 in Alveoli is 104, while in oxygenated blood, it is 95
82. Choose the correct statement
 (1) Photoreceptors in the human eye are depolarized during darkness and become hyperpolarized in response to the light stimulus
 (2) Receptors do not produce graded potentials
 (3) Nociceptors respond to changes in ppressure
 (4) Meissner's corpuscles are thermoreceptors
- Sol.(1)** Photoreceptors in the human eye are depolarized during darkness and become hyperpolarized in response to the light stimulus.
83. Graves's disease is caused due to
 (1) hyposecretion of adrenal gland
 (2) hypersecretion of adrenal gland
 (3) hyposecretion of thyroid gland
 (4) hypersecretion of thyroid gland
- Sol.(4)** Graves' disease is caused due to hypersecretion of thyroid gland.
84. Name the ion responsible for unmasking of active sites for myosin for cross-bridge activity during muscles contraction
 (1) Sodium (2) Potassium
 (3) Calcium (4) Magnesium
- Sol.(3)** Calcium ion is responsible for unmasking of active sites for myosin for cross-bridge activity during muscle contraction
85. Name the blood cells, whose reduction in number can cause clotting disorder, leading to excessive loss of blood from the body.
 (1) Neutrophils (2) Thrombocytes
 (3) Erythrocytes (4) Leucocytes

- Sol.(2)** Thrombocytes
86. Name a peptide hormone which acts mainly on hepatocytes, adipocytes and enhances cellular glucose uptake and utilization.
 (1) neutrophils (2) Thrombocytes
 (3) Insulin (4) Glucagon
- Sol.(3)** Insulin is a peptide hormone which acts mainly on hepatocytes, adipocytes and enhances cellular glucose uptake and utilization.
87. Osteoporosis, an age-related idisease of skeletal system, may occur due to
 (1) decreased level of estrogen
 (2) accumulation of uric acid leading to inflammation of joints
 (3) immune disorder affecting neuromuscular junction leading to fatigue
 (4) high concentration of Ca^{++} and Na^+
- Sol.(1)** Osteoporosis, an age related disease of skeletal system , may occur due to decreased level of estrogen
88. Serum differs from blood in
 (1) lacking clotting factors
 (2) lacking antibodies
 (3) lacking globulins
 (4) lacking albumins
- Sol.(1)** Blood Plasma–clotting factors =Serum
89. Lungs do not collapse between breaths and some air always remains in the lungs which can never be expelled because
 (1) there is a positive intrapleural pressure
 (2) pressure in the lungs is higher than the atmospheric pressure
 (3) there is a negative pressure in the lungs
 (4) there is a negative intrapleural pressure pulling at the lung walls
- Sol.(4)** Lungs do not collapse between breaths and some air always remains in the lungs which can never be expelled because there is a negative intrapleural pressure pulling at the lung walls.
90. The posterior pituitary gland is not a ' true ' endocrine gland because
 (1) it is under the regulation of hypothalamus
 (2) it secretes anzymes
 (3) it is provided with a duct
 (4) it only stores and releases hormones
- Sol.(4)** The posterior pituitary gland is **not** a 'true' endocrine gland because it only stores and releases hormones