

DU MSc Zoology

Topic:- ZOO MSC S2

1) If *Hydra* is cut into many pieces

[Question ID = 2508]

1. Each piece will develop into a young *Hydra*

[Option ID = 10026]

2. Each piece having a bit of nucleus will develop into a young *Hydra*

[Option ID = 10027]

3. Each piece having a bit of ectoderm and endoderm will gradually develop into a young *Hydra*

[Option ID = 10028]

4. Each piece will die

[Option ID = 10029]

Correct Answer :-

- Each piece having a bit of ectoderm and endoderm will gradually develop into a young *Hydra*

[Option ID = 10028]

2) Botryoidal tissue is found in

[Question ID = 2509]

1. Neanthes [Option ID = 10030]

2. Earthworm [Option ID = 10031]

3. Leeches [Option ID = 10032]

4. Balanoglossus [Option ID = 10033]

Correct Answer :-

- Leeches [Option ID = 10032]

3) The excretory organ in *Herdmania*

[Question ID = 2510]

1. Protonephridium

[Option ID = 10034]

2. Solenocyte

[Option ID = 10035]

3. Neural gland

[Option ID = 10036]

4. Flame cell

[Option ID = 10037]

Correct Answer :-

- Neural gland

[Option ID = 10036]

4) Aristotle's Lantern is found in

[Question ID = 2511]

1. *Echinocardium*

[Option ID = 10038]

2. *Holothuria*

[Option ID = 10039]

3. *Echinus*

[Option ID = 10040]

4. *Cucumaria*

[Option ID = 10041]

Correct Answer :-

- *Echinus*

[Option ID = 10040]



5) Which one of the following is not an insect?

[Question ID = 2512]

1. Termite [Option ID = 10042]
2. Spider [Option ID = 10043]
3. Mosquito [Option ID = 10044]
4. Ant [Option ID = 10045]

Correct Answer :-

- Spider [Option ID = 10043]

6) Gynacophoral canal is found in:-

[Question ID = 2513]

1. *Ancylostoma duodenale*
[Option ID = 10046]
2. *Schistosoma haematobium*
[Option ID = 10047]
3. *Ascaris lumbricoides*
[Option ID = 10048]
4. *Wuchereria bancrofti*
[Option ID = 10049]

Correct Answer :-

- *Schistosoma haematobium*
[Option ID = 10047]

7) The powerful muscle by which the bird raises and propell itself through the air is performed by:-

[Question ID = 2514]

1. Pectoralis minor [Option ID = 10050]
2. Flexor perforans [Option ID = 10051]
3. Pectoralis major [Option ID = 10052]
4. Flexor major [Option ID = 10053]

Correct Answer :-

- Pectoralis major [Option ID = 10052]

8) Neuromast organ in fishes are useful as:-

[Question ID = 2515]

1. Current receptors [Option ID = 10054]
2. Touch receptors [Option ID = 10055]
3. Thermoreceptors [Option ID = 10056]
4. Electroreceptors [Option ID = 10057]

Correct Answer :-

- Current receptors [Option ID = 10054]

9) Balanoglossus also known as:-

[Question ID = 2516]

1. Pin worms [Option ID = 10058]
2. Acron worm [Option ID = 10059]
3. Tape worms [Option ID = 10060]
4. Ring worms [Option ID = 10061]

Correct Answer :-

- Acron worm [Option ID = 10059]

10) In rabbit, sigmoid notch is present in:-

[Question ID = 2517]

1. Pectoral girdle [Option ID = 10062]
2. Pelvic girdle [Option ID = 10063]
3. Tibio-fibula [Option ID = 10064]
4. Radius-ulna [Option ID = 10065]

Correct Answer :-

- Radius-ulna [Option ID = 10065]

11) Sinsacrum in fowl is formed by the fusion of:-

[Question ID = 2518]

1. Thoracic vertebrae [Option ID = 10066]
2. Thoracic and lumbar vertebrae [Option ID = 10067]
3. Thoracic, lumbar and sacral vertebrae [Option ID = 10068]
4. Thoracic, lumbar, sacral and caudal vertebrae [Option ID = 10069]

Correct Answer :-

- Thoracic, lumbar, sacral and caudal vertebrae [Option ID = 10069]

12) Which of the following reptiles has four chambered heart?

[Question ID = 2519]

1. Turtle [Option ID = 10070]
2. Sphenodon [Option ID = 10071]
3. King cobra [Option ID = 10072]
4. Crocodile [Option ID = 10073]

Correct Answer :-

- Crocodile [Option ID = 10073]

13) Female *Anopheles* can be distinguished from female *Culex* because it sits

[Question ID = 2520]

1. At an angle with substratum
[Option ID = 10074]
2. Parallel to surface of substratum
[Option ID = 10075]
3. At right angles to surface of substratum
[Option ID = 10076]
4. Without using all six legs
[Option ID = 10077]

Correct Answer :-

- At an angle with substratum
[Option ID = 10074]

14) The variant hemoglobin in sickle cell anemia binds O₂ less efficiently. However, the abnormal allele has not been eliminated from the affected population as it has a selection advantage against

[Question ID = 2521]

1. Pernicious anemia [Option ID = 10078]
2. Leukemia [Option ID = 10079]
3. Malaria [Option ID = 10080]
4. Thalassemia [Option ID = 10081]

Correct Answer :-

- Malaria [Option ID = 10080]

15) Which one of the following is an incorrect match?

[Question ID = 2522]

1. Symbiosis-*Trichonympha*
[Option ID = 10082]
2. Commensalism-*Balantidium*
[Option ID = 10083]
3. Parasitism-*Trypanosoma*
[Option ID = 10084]
4. Free living-*Paramecium*
[Option ID = 10085]

Correct Answer :-

- Commensalism-*Balantidium*
[Option ID = 10083]

16) Aortic arch VI gives rise to the pulmonary artery but maintains its connection with the dorsal aorta through:-

[Question ID = 2523]

1. Ductus arteriosus [Option ID = 10086]
2. Ductus caroticus [Option ID = 10087]
3. Ductus bulbus [Option ID = 10088]
4. Ductus pneumaticus [Option ID = 10089]

Correct Answer :-

- Ductus arteriosus [Option ID = 10086]

17) Which one of the following amphibians has partial interventricular septum in heart?

[Question ID = 2524]

1. *Siren*

[Option ID = 10090]

2. *Proteus*

[Option ID = 10091]

3. *Rana*

[Option ID = 10092]

4. *Uraeotyphlus*

[Option ID = 10093]

Correct Answer :-

- *Siren*

[Option ID = 10090]

18) Which part of the middle ear transmits sound vibrations to fenestra rotunda of internal ear:-

[Question ID = 2525]

1. Stapes [Option ID = 10094]

2. Incus [Option ID = 10095]

3. Malleus [Option ID = 10096]

4. Tympanum [Option ID = 10097]

Correct Answer :-

- Stapes [Option ID = 10094]

19) Third chamber in the stomach of a ruminant mammal is:-

[Question ID = 2526]

1. Abomasum [Option ID = 10098]

2. Omasum [Option ID = 10099]

3. Rumen [Option ID = 10100]

4. Reticulum [Option ID = 10101]

Correct Answer :-

- Omasum [Option ID = 10099]

20) The type of jaw suspensorium in shark is:-

[Question ID = 2527]

1. Autodiastylitic [Option ID = 10102]

2. Amphistylitic [Option ID = 10103]

3. Hyostylitic [Option ID = 10104]

4. Streptostylitic [Option ID = 10105]

Correct Answer :-

- Hyostylitic [Option ID = 10104]

21) Which of the following continents is included in the Neotropical faunal realm?

[Question ID = 2528]

1. North America [Option ID = 10106]

2. South America [Option ID = 10107]

3. Africa [Option ID = 10108]

4. Australia [Option ID = 10109]

Correct Answer :-

- South America [Option ID = 10107]

22) Darwin's finches represent the example of

[Question ID = 2529]

1. Convergent evolution [Option ID = 10110]

2. Parallel evolution [Option ID = 10111]

3. Adaptive radiation [Option ID = 10112]

4. Co-evolution [Option ID = 10113]

Correct Answer :-

- Adaptive radiation [Option ID = 10112]

23) A novel phenotypic trait that helps in success of a taxonomic group and its subsequent radiation is called

[Question ID = 2530]

1. Key innovation [Option ID = 10114]

2. Adaptive trait [Option ID = 10115]

3. Evolutionary novelty [Option ID = 10116]

4. Crucial trait [Option ID = 10117]

Correct Answer :-

- Key innovation [Option ID = 10114]

24) The extinction of dinosaurs occurred as a result of mass extinction event that took place at the

[Question ID = 2531]

1. End of Devonian period [Option ID = 10118]
2. End of Cretaceous period [Option ID = 10119]
3. End of Triassic period [Option ID = 10120]
4. End of Permian period [Option ID = 10121]

Correct Answer :-

- End of Cretaceous period [Option ID = 10119]

25) Presence of which of the following is an important evidence for organic evolution?

[Question ID = 2532]

1. homologous organs only [Option ID = 10122]
2. homologous and vestigial organs [Option ID = 10123]
3. homologous and analogous organs [Option ID = 10124]
4. analogous and vestigial organs [Option ID = 10125]

Correct Answer :-

- homologous and vestigial organs [Option ID = 10123]

26) Bergman's rule refers to a general tendency of mammals to be

[Question ID = 2533]

1. large in size in colder areas of the their distribution [Option ID = 10126]
2. smaller in size in areas of the their distribution [Option ID = 10127]
3. darker pigments in warmer areas of the their distribution [Option ID = 10128]
4. lighter pigments in warmer areas of the their distribution [Option ID = 10129]

Correct Answer :-

- large in size in colder areas of the their distribution [Option ID = 10126]

27) Which of the following statement is TRUE?

[Question ID = 2534]

1. Evolution is goal oriented [Option ID = 10130]
2. Mutations are always harmful [Option ID = 10131]
3. Variations are necessary for natural selection [Option ID = 10132]
4. Speciation always requires geographical isolation [Option ID = 10133]

Correct Answer :-

- Variations are necessary for natural selection [Option ID = 10132]

28) 'Philosophie Zoologique' was written by:-

[Question ID = 2535]

1. Charles Darwin [Option ID = 10134]
2. Jean-Baptiste Lamarck [Option ID = 10135]
3. Richard Dawkins [Option ID = 10136]
4. Russel Wallace [Option ID = 10137]

Correct Answer :-

- Jean-Baptiste Lamarck [Option ID = 10135]

29) Within a small population, variations can occur in gene frequencies by chance rather than natural selection. It may be referred as

[Question ID = 2536]

1. Genetic flow [Option ID = 10138]
2. Genetic load [Option ID = 10139]
3. Genetic drift [Option ID = 10140]
4. Genetic equilibrium [Option ID = 10141]

Correct Answer :-

- Genetic drift [Option ID = 10140]

30) Monarch and Viceroy butterflies are an example of:-

[Question ID = 2537]

1. Mullerian mimicry [Option ID = 10142]
2. Batesian mimicry [Option ID = 10143]
3. Peckhamian mimicry [Option ID = 10144]
4. Vavilovian mimicry [Option ID = 10145]

Correct Answer :-

- Batesian mimicry [Option ID = 10143]

31) The correct route through which pulse making impulses in the heart is:-

[Question ID = 2538]

1. SA node> Purkinjee fibre> bundles of His> AV node> heart muscles [Option ID = 10146]
2. SA node> AV node>bundles of His> Purkinjee fibre > heart muscles [Option ID = 10147]
3. AV node> Purkinjee fibre> SA node> bundle of His> heart muscles [Option ID = 10148]
4. AV node> SA node> Purkinjee fibre> bundles of His> heart muscles [Option ID = 10149]

Correct Answer :-

- SA node> AV node>bundles of His> Purkinjee fibre > heart muscles [Option ID = 10147]

32) Which of the following is controlled by autonomous nervous system?

[Question ID = 2539]

1. Papillary reflex [Option ID = 10150]
2. Swallowing food [Option ID = 10151]
3. Knee jerk response [Option ID = 10152]
4. Peristalsis [Option ID = 10153]

Correct Answer :-

- Peristalsis [Option ID = 10153]

33) Match List I with List II

List I	List II
Vitamins	Diseases
A. K	I. Beri-beri
B. D	II. Haemorrhagic disease of new born
C. B1	III. Night blindness
D. A	IV. Rickets

Choose the correct answer from the options given below:

[Question ID = 2540]

1. A - III, B - II, C - IV, D - I
[Option ID = 10154]
2. A - I, B - II, C - IV, D - III
[Option ID = 10155]
3. A - III, B - I, C - IV, D - II
[Option ID = 10156]
4. A - II, B - IV, C - I, D - III
[Option ID = 10157]

Correct Answer :-

- A - II, B - IV, C - I, D - III
[Option ID = 10157]

34) Which of the following is a light compass response?

[Question ID = 2541]

1. Geomagnetaxis [Option ID = 10158]
2. Hydrotaxis [Option ID = 10159]
3. Menotaxis [Option ID = 10160]
4. Mnemotaxis [Option ID = 10161]

Correct Answer :-

- Menotaxis [Option ID = 10160]

35) The non-descendence of testis into the scrotal sac is referred as

[Question ID = 2542]

1. Orchidectomy [Option ID = 10162]
2. Vasectomy [Option ID = 10163]
3. Hypogonadism [Option ID = 10164]
4. Cryptorchidism [Option ID = 10165]

Correct Answer :-

- Cryptorchidism [Option ID = 10165]

36) Hypophysectomy of the adult female rat prevents the development of:-

[Question ID = 2543]

1. Primordial follicle [Option ID = 10166]
2. Primary follicle [Option ID = 10167]
3. Secondary follicle [Option ID = 10168]
4. Graffian follicle [Option ID = 10169]

Correct Answer :-

- Graffian follicle [Option ID = 10169]

37) Mammalian acrosomal reaction is initiated by which of the following?

[Question ID = 2544]

1. ZP1 [Option ID = 10170]
2. ZP2 [Option ID = 10171]
3. ZP2f [Option ID = 10172]
4. ZP3 [Option ID = 10173]

Correct Answer :-

- ZP3 [Option ID = 10173]

38) Vasopressin is synthesized by:-

[Question ID = 2545]

1. Pars distalis [Option ID = 10174]
2. Pars intermedia [Option ID = 10175]
3. Pars nervosa [Option ID = 10176]
4. Hypothalamus [Option ID = 10177]

Correct Answer :-

- Hypothalamus [Option ID = 10177]

39) In the organ of Corti, apical projections of hair cells are in intimate contact with:-

[Question ID = 2546]

1. Reissner's membrane [Option ID = 10178]
2. Basilar membrane [Option ID = 10179]
3. Decemet's membrane [Option ID = 10180]
4. Tectorial membrane [Option ID = 10181]

Correct Answer :-

- Tectorial membrane [Option ID = 10181]

40) The hormone which causes moulting in arthropods is:-

[Question ID = 2547]

1. Thyroxin [Option ID = 10182]
2. Ecdysone [Option ID = 10183]
3. Prolactin [Option ID = 10184]
4. Juvenile hormone [Option ID = 10185]

Correct Answer :-

- Ecdysone [Option ID = 10183]

41) End product of glycolysis in red blood cells is

[Question ID = 2548]

1. Acetyl CoA [Option ID = 10186]
2. Pyruvic acid [Option ID = 10187]
3. Lactic acid [Option ID = 10188]
4. 3-Phosphoglycerate [Option ID = 10189]

Correct Answer :-

- Lactic acid [Option ID = 10188]

42) For a given fixed length of double stranded DNA, melting temperature (T_m) is

[Question ID = 2549]

1. Directly proportional to GC base content [Option ID = 10190]
2. Inversely proportional to GC base content [Option ID = 10191]
3. Directly proportional to AT base content [Option ID = 10192]
4. Not related to base composition of DNA [Option ID = 10193]

Correct Answer :-

- Directly proportional to GC base content [Option ID = 10190]

43) At pH value greater than pK_a of COOH group in the amino acid, the amino acid will be

[Question ID = 2550]

1. Positive charged [Option ID = 10194]
2. Negative charged [Option ID = 10195]
3. No charge [Option ID = 10196]
4. Both positive and negative charges [Option ID = 10197]

Correct Answer :-

- Negative charged [Option ID = 10195]

44) Calcium is stored in the muscle cell

[Question ID = 2551]

1. In the cytoplasm [Option ID = 10198]
2. In the sarcoplasmic reticulum [Option ID = 10199]

3. In the vacuoles as free calcium [Option ID = 10200]
4. In the nucleus as free calcium [Option ID = 10201]

Correct Answer :-

- In the sarcoplasmic reticulum [Option ID = 10199]

45) ATP is synthesized in mitochondria and also in glycolysis. During synthesis of ATP in glycolysis, phosphate is provided by
[Question ID = 2552]

1. glucose-6-phosphate and fructose-6-phosphate [Option ID = 10202]
2. 3-phospho-gyceraldehyde and di-hydroxyacetone phosphate [Option ID = 10203]
3. 1,6 bis-phosphofuctose and 3-phosphoglyceric acid [Option ID = 10204]
4. 1,3 bis-phospho glycerate and phosphoenol pyruvate [Option ID = 10205]

Correct Answer :-

- 1,3 bis-phospho glycerate and phosphoenol pyruvate [Option ID = 10205]

46) Fructose intolerance is due to
[Question ID = 2553]

1. Increased production of lactase [Option ID = 10206]
2. Increased production of amylase [Option ID = 10207]
3. Reduced production of aldolase [Option ID = 10208]
4. Reduced production of cellulase [Option ID = 10209]

Correct Answer :-

- Reduced production of aldolase [Option ID = 10208]

47) In presence of oxygen, glycolysis is suppressed and it is called
[Question ID = 2554]

1. Bohr's Effect [Option ID = 10210]
2. Warburg Effect [Option ID = 10211]
3. Pasteur Effect [Option ID = 10212]
4. Haldane's Effect [Option ID = 10213]

Correct Answer :-

- Pasteur Effect [Option ID = 10212]

48) What is the pH of a solution whose hydrogen ion concentration is 3.2×10^{-4} mol/L?
[Question ID = 2555]

1. 3.5 [Option ID = 10214]
2. 4.5 [Option ID = 10215]
3. 4.0 [Option ID = 10216]
4. 3.0 [Option ID = 10217]

Correct Answer :-

- 3.5 [Option ID = 10214]

49) The detection of restriction fragment length polymorphisms relies on a specialized hybridization technique called
[Question ID = 2556]

1. Southern blotting [Option ID = 10218]
2. northern blotting [Option ID = 10219]
3. western blotting [Option ID = 10220]
4. north-western blotting [Option ID = 10221]

Correct Answer :-

- Southern blotting [Option ID = 10218]

50) Muscle phosphorylase deficiency cause a glycogen storage disease known as
[Question ID = 2557]

1. McArdle's Disease [Option ID = 10222]
2. von Gierke's Disease [Option ID = 10223]
3. Cori's Disease [Option ID = 10224]
4. Andersen's Disease [Option ID = 10225]

Correct Answer :-

- McArdle's Disease [Option ID = 10222]

51) A symmetrical molecule that reacts asymmetrically in Krebs cycle
[Question ID = 2558]

1. Citrate [Option ID = 10226]
2. Succinate [Option ID = 10227]
3. Malate [Option ID = 10228]
4. Fumerate [Option ID = 10229]

Correct Answer :-

- Citrate [Option ID = 10226]

52) Which of the following condenses acyl and malonyl groups?

[Question ID = 2559]

1. Acyl carrier protein [Option ID = 10230]
2. Acetyl co-A ACP transacetylase [Option ID = 10231]
3. Malonyl co-A ACP transferase [Option ID = 10232]
4. B-ketoacyl ACP synthase [Option ID = 10233]

Correct Answer :-

- Malonyl co-A ACP transferase [Option ID = 10232]

53) Transamination reactions essentially require coenzyme

[Question ID = 2560]

1. NAD [Option ID = 10234]
2. Thiamine pyrophosphate [Option ID = 10235]
3. Pyridoxal phosphate [Option ID = 10236]
4. Coenzyme A [Option ID = 10237]

Correct Answer :-

- Pyridoxal phosphate [Option ID = 10236]

54) Which of the following trisomy karyotypes has the mildest effect on human development?

[Question ID = 2561]

1. 47, XXX [Option ID = 10238]
2. 47, XXY [Option ID = 10239]
3. 47, XX,+13 [Option ID = 10240]
4. 47, XY,+21 [Option ID = 10241]

Correct Answer :-

- 47, XXX [Option ID = 10238]

55) Which of the following conditions shows anticipation in paternal transmission?

[Question ID = 2562]

1. Huntington disease [Option ID = 10242]
2. Marfan syndrome [Option ID = 10243]
3. Cystic fibrosis [Option ID = 10244]
4. Fragile X syndrome [Option ID = 10245]

Correct Answer :-

- Huntington disease [Option ID = 10242]

56) Which of the following conditions DOES NOT show multifactorial inheritance?

[Question ID = 2563]

1. Pyloric stenosis [Option ID = 10246]
2. Schizophrenia [Option ID = 10247]
3. Spina bifida (neural tube defects) [Option ID = 10248]
4. Marfan syndrome [Option ID = 10249]

Correct Answer :-

- Marfan syndrome [Option ID = 10249]

57) Mendel discovered principles of inheritance because he

[Question ID = 2564]

1. Observed simultaneously all the characteristics in which the parents differed [Option ID = 10250]
2. Believed that the hereditary characteristics of two individuals became thoroughly blended in the offspring [Option ID = 10251]
3. Ignored all characteristics except a few markedly contrasting ones he studied [Option ID = 10252]
4. Studied only the offspring obtained from a single mating [Option ID = 10253]

Correct Answer :-

- Ignored all characteristics except a few markedly contrasting ones he studied [Option ID = 10252]

58) Cornea transplant in humans is almost never rejected, because

[Question ID = 2565]

1. It is composed of enucleated cells [Option ID = 10254]
2. It is a non - living layer [Option ID = 10255]
3. Its cells are not penetrable by bacteria [Option ID = 10256]
4. It is avascular [Option ID = 10257]

Correct Answer :-

- It is avascular [Option ID = 10257]

59) The most sensitive area of the entire larynx and respiratory tract for triggering a cough reflex is

[Question ID = 2566]

1. Glottis [Option ID = 10258]
2. Respiratory bronchioles [Option ID = 10259]

3. Trachealis muscles [Option ID = 10260]
4. Mucus membrane of carina [Option ID = 10261]

Correct Answer :-

- Mucus membrane of carina [Option ID = 10261]

60) The conjugation between F^+ and F^- cells will be:-

[Question ID = 2567]

1. Two F^+ cells [Option ID = 10262]
2. Two F^- cells [Option ID = 10263]
3. Two F' cells [Option ID = 10264]
4. Two Hfr cells [Option ID = 10265]

Correct Answer :-

- Two F' cells [Option ID = 10264]

61) The modified dihybrid ratio due to recessive epistasis is

[Question ID = 2568]

1. 9:7 [Option ID = 10266]
2. 9:3:4 [Option ID = 10267]
3. 12:3:1 [Option ID = 10268]
4. 15:1 [Option ID = 10269]

Correct Answer :-

- 9:3:4 [Option ID = 10267]

62) Which of the following aberrations DOES NOT change in chromosomal arm ratio?

[Question ID = 2569]

1. Pericentric inversion [Option ID = 10270]
2. Paracentric inversion [Option ID = 10271]
3. Reciprocal translocation [Option ID = 10272]
4. Non-reciprocal translocation [Option ID = 10273]

Correct Answer :-

- Pericentric inversion [Option ID = 10270]

63) If $AaBbccDdEe$ is crossed with $AaBbCcddEe$, the proportion of $aabbccdde$ among progenies will be

[Question ID = 2570]

1. $1/32$ [Option ID = 10274]
2. $1/64$ [Option ID = 10275]
3. $1/128$ [Option ID = 10276]
4. $1/256$ [Option ID = 10277]

Correct Answer :-

- $1/256$ [Option ID = 10277]

64) In a population of 60 individuals, 42 people were found to have an allele for polydactyly, out of which 38 were found to have an extra digit. The penetrance is:-

[Question ID = 2571]

1. 0.6 [Option ID = 10278]
2. 0.70 [Option ID = 10279]
3. 0.90 [Option ID = 10280]
4. 1.00 [Option ID = 10281]

Correct Answer :-

- 0.90 [Option ID = 10280]

65) The agent used to fuse the membranes of cells from two different cell lines in somatic cell hybridization is

[Question ID = 2572]

1. HAT [Option ID = 10282]
2. PEG [Option ID = 10283]
3. HGPRT [Option ID = 10284]
4. TK [Option ID = 10285]

Correct Answer :-

- PEG [Option ID = 10283]

66) Lampbrush chromosomes are found in

[Question ID = 2573]

1. Brain cells of cat [Option ID = 10286]
2. Germ cells of mammalia [Option ID = 10287]
3. Ovarian cells of amphibians [Option ID = 10288]
4. Salivary glands of diptera [Option ID = 10289]

Correct Answer :-

- Ovarian cells of amphibians [Option ID = 10288]

67) Anoikis is a form of cell death which arises when one of the following proteins detaches from extracellular matrix. Identify the cell adhesion molecule

[Question ID = 2574]

1. Cadherin [Option ID = 10290]
2. Integrin [Option ID = 10291]
3. Selectin [Option ID = 10292]
4. I-CAM [Option ID = 10293]

Correct Answer :-

- Integrin [Option ID = 10291]

68) Which pathway relies on activated Smads to transduce its signals?

[Question ID = 2575]

1. Notch signaling [Option ID = 10294]
2. TGF- beta signaling [Option ID = 10295]
3. Wnt signaling [Option ID = 10296]
4. TNF-signalling [Option ID = 10297]

Correct Answer :-

- Wnt signaling [Option ID = 10296]

69) Which of the following is observed during Anaphase B?

[Question ID = 2576]

1. Depolymerisation of microtubules [Option ID = 10298]
2. Shortening of polar microtubules [Option ID = 10299]
3. Consumption of ATP [Option ID = 10300]
4. Sliding of kinetochore microtubules [Option ID = 10301]

Correct Answer :-

- Consumption of ATP [Option ID = 10300]

70) Import of glucose by the intestinal epithelial cell:-

[Question ID = 2577]

1. Is dependent on hydrolysis of ATP [Option ID = 10302]
2. Requires expression of GLUT1 on the plasma membrane [Option ID = 10303]
3. Occurs throughout the phospholipid bilayer [Option ID = 10304]
4. Is facilitated by GLUT2 [Option ID = 10305]

Correct Answer :-

- Is dependent on hydrolysis of ATP [Option ID = 10302]

71) Integrity of tight junctions is essential for

[Question ID = 2578]

1. Transfer of second messengers [Option ID = 10306]
2. Metabolic coupling [Option ID = 10307]
3. Peristalsis [Option ID = 10308]
4. Transepithelial transport [Option ID = 10309]

Correct Answer :-

- Transepithelial transport [Option ID = 10309]

72) If cardiolipin biosynthesis decreases in eukaryotic cells

[Question ID = 2579]

1. ATP synthesis would be unaffected [Option ID = 10310]
2. The function of the ETC would be affected adversely [Option ID = 10311]
3. The potential would remain at 140 mV [Option ID = 10312]
4. ADP would be imported into the matrix [Option ID = 10313]

Correct Answer :-

- The function of the ETC would be affected adversely [Option ID = 10311]

73) Fleming's bacterial culture during the discovery of penicillin was of

[Question ID = 2580]

1. *Enterobacteria*
[Option ID = 10314]
2. *Salmonella*
[Option ID = 10315]
3. *Staphylococcus*
[Option ID = 10316]
4. *Streptococcus*

[Option ID = 10317]

Correct Answer :-

- *Staphylococcus*

[Option ID = 10316]

74) Mad cow disease is caused by a

[Question ID = 2581]

1. Virus [Option ID = 10318]
2. Viroid [Option ID = 10319]
3. PPLO [Option ID = 10320]
4. Prion [Option ID = 10321]

Correct Answer :-

- Prion [Option ID = 10321]

75) The recognition sequence for BamHI is 5' G/GATCC 3'. The '/' represents the cutting site. What can be inferred about the ends from it?

[Question ID = 2582]

1. The ends created are double stranded [Option ID = 10322]
2. The single stranded end is 5' in nature [Option ID = 10323]
3. The single stranded ends are 3' in nature [Option ID = 10324]
4. The nature of the ends cannot be inferred [Option ID = 10325]

Correct Answer :-

- The single stranded end is 5' in nature [Option ID = 10323]

76) If you have a DNA fragment, with blunt ends on both side, in order to make it sticky which enzyme would you select?

[Question ID = 2583]

1. DNA polymerase [Option ID = 10326]
2. Terminal nucleotydyl transferase [Option ID = 10327]
3. Alkaline phosphatase [Option ID = 10328]
4. Reverse transcriptase [Option ID = 10329]

Correct Answer :-

- Terminal nucleotydyl transferase [Option ID = 10327]

77) Even after replication in *E. coli*, how does the modified DNA remain protected?

[Question ID = 2584]

1. It remains protected because of conservative mode of replication
[Option ID = 10330]
2. It remains protected because of semi-conservative mode of replication
[Option ID = 10331]
3. The mode of replication has no role to play in the protection
[Option ID = 10332]
4. It is again modified after replication
[Option ID = 10333]

Correct Answer :-

- It remains protected because of semi-conservative mode of replication
[Option ID = 10331]

78) Among following DNA polymerases, which one is required for the mitochondrial DNA replication?

[Question ID = 2585]

1. DNA pol epsilon [Option ID = 10334]
2. DNA pol zeta [Option ID = 10335]
3. DNA pol gamma [Option ID = 10336]
4. DNA pol lambda [Option ID = 10337]

Correct Answer :-

- DNA pol gamma [Option ID = 10336]

79) What is the role of SDS in SDS-PAGE?

[Question ID = 2586]

1. Protein denaturing and imparting negative charge [Option ID = 10338]
2. Imparting overall a uniform positive charge to protein [Option ID = 10339]
3. Imparting equal mass to all proteins [Option ID = 10340]
4. Protein unfolding and imparting net positive charge [Option ID = 10341]

Correct Answer :-

- Protein denaturing and imparting negative charge [Option ID = 10338]

80) Sabin polio vaccine consists of

[Question ID = 2587]

1. Three attenuated strains of polio virus [Option ID = 10342]
2. Two live strains of polio virus [Option ID = 10343]
3. Three killed strains of polio virus [Option ID = 10344]
4. Two attenuated strains of polio virus [Option ID = 10345]

Correct Answer :-

- Three attenuated strains of polio virus [Option ID = 10342]

81) Which type of hypersensitivity is due to antigen- antibody complex accumulation?

[Question ID = 2588]

1. Type I [Option ID = 10346]
2. Type II [Option ID = 10347]
3. Type III [Option ID = 10348]
4. Type IV [Option ID = 10349]

Correct Answer :-

- Type III [Option ID = 10348]

82) Bence -Jones proteins discovered in urine of myeloma patients are:-

[Question ID = 2589]

1. Excess light chains [Option ID = 10350]
2. Excess heavy chains [Option ID = 10351]
3. Mixture of heavy and light chains [Option ID = 10352]
4. Fab fragments [Option ID = 10353]

Correct Answer :-

- Excess light chains [Option ID = 10350]

83) Negative selection of thymocytes during their maturation ensures

[Question ID = 2590]

1. MHC restriction [Option ID = 10354]
2. Self-tolerance [Option ID = 10355]
3. Both self-tolerance and MHC restriction [Option ID = 10356]
4. Neither self-tolerance nor MHC restriction [Option ID = 10357]

Correct Answer :-

- Self-tolerance [Option ID = 10355]

84) Antimicrobial peptides of silkworm are called

[Question ID = 2591]

1. Cecropins [Option ID = 10358]
2. Alpha defensins [Option ID = 10359]
3. Beta defensins [Option ID = 10360]
4. Cathelicidins [Option ID = 10361]

Correct Answer :-

- Cecropins [Option ID = 10358]

85) The hinge region of antibody is rich in

[Question ID = 2592]

1. Glycine and alanine [Option ID = 10362]
2. Leucine and valine [Option ID = 10363]
3. Proline and cysteine [Option ID = 10364]
4. Arginine and histidine [Option ID = 10365]

Correct Answer :-

- Proline and cysteine [Option ID = 10364]

86) 'Freund's complete adjuvant' developed by Jules Freund had an additional component that was absent in 'Freund's incomplete adjuvant', it was

[Question ID = 2593]

1. mineral oil [Option ID = 10366]
2. emulsifying agent [Option ID = 10367]
3. mycobacteria [Option ID = 10368]
4. the antigen [Option ID = 10369]

Correct Answer :-

- mycobacteria [Option ID = 10368]

87) The mouse major histocompatibility complex is a collection of genes arrayed on long continuous DNA

[Question ID = 2594]

1. Chromosome 11 [Option ID = 10370]
2. Chromosome X [Option ID = 10371]
3. Chromosome 6 [Option ID = 10372]
4. Chromosome 17 [Option ID = 10373]

Correct Answer :-

- Chromosome 17 [Option ID = 10373]

88) Peptide fragments generated in the cell's cytoplasm are transported into the endoplasmic reticulum by

[Question ID = 2595]

1. MHC-I [Option ID = 10374]
2. TAP-I and TAP-2 [Option ID = 10375]
3. HLA-DM [Option ID = 10376]
4. Invariant chain [Option ID = 10377]

Correct Answer :-

- TAP-I and TAP-2 [Option ID = 10375]

89) Which of the following is not a professional antigen presenting cell?

[Question ID = 2596]

1. B cell [Option ID = 10378]
2. T cell [Option ID = 10379]
3. Macrophage [Option ID = 10380]
4. Dendritic cell [Option ID = 10381]

Correct Answer :-

- T cell [Option ID = 10379]

90) Radioimmunoassay is one of the most sensitive technique for detecting antigen or antibody. It was first developed by

[Question ID = 2597]

1. Kohler and Milestein [Option ID = 10382]
2. Berson and Yalow [Option ID = 10383]
3. Zinkernagel and Doherty [Option ID = 10384]
4. Porter and Edelman [Option ID = 10385]

Correct Answer :-

- Berson and Yalow [Option ID = 10383]

91) Cell to cell communication is important in development of an organism. The ability of cells to respond to a specific inductive signal is called

[Question ID = 2598]

1. Induction [Option ID = 10386]
2. Competence [Option ID = 10387]
3. Specificity [Option ID = 10388]
4. Instructive interaction [Option ID = 10389]

Correct Answer :-

- Competence [Option ID = 10387]

92) Acrosome of the sperm is formed from

[Question ID = 2599]

1. Golgi body [Option ID = 10390]
2. Mitochondria [Option ID = 10391]
3. Centriole [Option ID = 10392]
4. Endoplasmic reticulum [Option ID = 10393]

Correct Answer :-

- Golgi body [Option ID = 10390]

93) The type of cleavage in an insect egg is

[Question ID = 2600]

1. Holoblastic [Option ID = 10394]
2. Meroblastic [Option ID = 10395]
3. Superficial [Option ID = 10396]
4. Discoidal [Option ID = 10397]

Correct Answer :-

- Superficial [Option ID = 10396]

94) The gastrular movement involved in migration of individual cells from the surface to interior of embryo is termed as

[Question ID = 2601]

1. Ingression [Option ID = 10398]
2. Involution [Option ID = 10399]
3. Invagination [Option ID = 10400]

4. Delamination [Option ID = 10401]

Correct Answer :-

- Ingression [Option ID = 10398]

95) In following model organisms, which one is pseudotetraploid?

[Question ID = 2602]

1. *Danio rerio*

[Option ID = 10402]

2. *Xenopus laevis*

[Option ID = 10403]

3. *Drosophila melanogaster*

[Option ID = 10404]

4. *Xenopus tropicalis*

[Option ID = 10405]

Correct Answer :-

- *Xenopus laevis*

[Option ID = 10403]

96) Match List I with List II

List I	List II
A. Mouse	I. meroblastic cleavage, discoblastula
B. <i>Xenopus</i>	II. holoblastic cleavage, amphiblastula
C. Chick	III. rotational cleavage, blastocyst
D. <i>Danio rerio</i>	IV. discoidal cleavage, discoblastula, cleidoic egg

Choose the correct answer from the options given below:-

[Question ID = 2603]

1. A - IV, B - I, C - II, D - III

[Option ID = 10406]

2. A - III, B - II, C - IV, D - I

[Option ID = 10407]

3. A - IV, B - II, C - I, D - III

[Option ID = 10408]

4. A - I, B - II, C - III, D - IV

[Option ID = 10409]

Correct Answer :-

- A - III, B - II, C - IV, D - I

[Option ID = 10407]

97) Which one of the following provides fast block to polyspermy during sea urchin fertilization?

[Question ID = 2604]

1. Wave of calcium release [Option ID = 10410]

2. Release of the contents from cortical granules [Option ID = 10411]

3. Depolarization of egg membrane [Option ID = 10412]

4. Activation of phospholipase C zeta [Option ID = 10413]

Correct Answer :-

- Depolarization of egg membrane [Option ID = 10412]

98) Following are the events that occur during fertilization.

- Activation of egg metabolism to start development
- Fusion of genetic material from the two gametes
- Regulation of sperm entry into the egg
- Contact and recognition between sperm and egg

Choose answer from the options given below.

representing correct order of the events.

[Question ID = 2605]

1. A, B, C, D

[Option ID = 10414]

2. B, C, D, A

[Option ID = 10415]

3. D, C, B, A

[Option ID = 10416]

4. C, D, A, B

[Option ID = 10417]

Correct Answer :-

- D, C, B, A

[Option ID = 10416]

99) During development of *Xenopus* embryo, mesoderm elongation towards the anterior results from intercalation of cells during a process called:-

[Question ID = 2606]

1. Involution

[Option ID = 10418]

2. Convergent extension

[Option ID = 10419]

3. Proliferation

[Option ID = 10420]

4. Invagination

[Option ID = 10421]

Correct Answer :-

- Convergent extension

[Option ID = 10419]

100) The dorsal-most vegetal cells of the blastula which are capable of inducing the organizer are called:-

[Question ID = 2607]

1. Dorsal lip of the blastopore [Option ID = 10422]

2. Grey crescent [Option ID = 10423]

3. Nieuwkoop center [Option ID = 10424]

4. Bottle cells [Option ID = 10425]

Correct Answer :-

- Nieuwkoop center [Option ID = 10424]