

**SRI CHAITANYA EDUCATIONAL INSTITUTIONS, A.P.**

HYDERABAD ✪ Guntur ✪ VIJAYAWADA ✪ Visakhapatnam ✪ Tirupathi ✪ Eluru ✪ Bhimavaram ✪ Rajahmundry ✪  
Kakinada ✪ Machilipatnam ✪ Tenali ✪ Srikakulam ✪ Ongole ✪ Anantapuram ✪ Nellore ✪ Amalapuram ✪ Chittoor ✪ Kurnool

**CENTRAL OFFICE- MADHAPUR**  
**EAMCET-2015 MEDICAL CODE – D (08-05-2015)**

**BOTANY**

1. Match the following.

List – I

- (A) HIV  
(B) Pilus  
(C) Virus penetration  
(D) Lysogeny

List – II

- (i) ghost  
(ii) prophage  
(iii) Retroviridae  
(iv) donor  
(v) Polyhedral virus

A

B

C

D

- |           |       |       |      |
|-----------|-------|-------|------|
| (1) (i)   | (ii)  | (iii) | (iv) |
| (2) (v)   | (iv)  | (iii) | (ii) |
| (3) (v)   | (iii) | (ii)  | (i)  |
| (4) (iii) | (iv)  | (i)   | (ii) |

Ans : 4

2. Arrange the following in decreasing order based on the results obtained in the F<sub>2</sub> progeny of a dihybrid cross.

- (A) Total number of parental genotypes  
(B) Total number of recombinant genotypes  
(c) Total phenotypes  
(D) Total genotypes
- (1) C B D A      (2) A C D B      (3) D A C B      (4) D B C A

Ans : 4

3. Assertion (A): Transcription unit is often monocistronic in eukaryotes and polycistronic in prokaryotes

Reason (R): Exons do not appear in mature RNA, introns appear in mature RNA

- (1) (A) and (R) are true (R) is correct explanation of (A)  
(2) (A) and (R) are true, (R) is not the correct explanation of (A)  
(3) (A) is true (R) is false    (4) (A) is false (R) is true

Ans : 3

4. Identify the steps that are involved in PCR

- (A) Denaturation      (B) Annealing



(C) Extension

(D) Down stream processing

(1) B, D, C

(2) A, D, B

(3) A, B, C

(4) A, C, D

Ans : 3

5. Match the following

List – I

List – II

(A) Fermenting malted cereals and fruit juices

(i) Clots in the blood vessels

(B) Production of large holes in swiss cheese

(ii) Digestion of sludge by bacteria and fungi resulting in emission of methane and other gases.

(C) Myocardial infection (iii) Production of ethanol

(D) Biogas

(iv) Blood cholesterol lowering agent

(v) Production of large amount of CO<sub>2</sub>

A

B

C

D

(1) (iii)

(v)

(iv)

(ii)

(2) (i)

(ii)

(iii)

(iv)

(3) (iii)

(v)

(i)

(ii)

(4) (v)

(iv)

(iii)

(ii)

Ans : 3

6. In recent years some crops were improved by various methods for higher yield and better quality of food grains. Match the improved varieties with the related crop.

(A) Golden Rice

(i) Cross breed Hybrid

(B) I. R. 8 Rice

(ii) Somatic hybrid

(C) Himgiri wheat

(iii) Semi-dwarf variety

(D) Pomato

(iv) Genetically modified crop

A

B

C

D

(1) (iv)

(i)

(ii)

(iii)

(2) (iv)

(iii)

(i)

(ii)

(3) (ii)

(iv)

(i)

(iii)

(4) (i)

(iii)

(iv)

(ii)

Ans : 2

7. The recognition sequence of restriction enzyme 'A' is GGCC and that of 'B' is GAATTC. Which statement among the following is the true regarding the probable frequency of cutting sites in a genome.

(1) Both (A) &amp; (B) cut equally frequently

(2) (A) cuts once every 676 nucleotides and (B) 1024 nucleotides



(3) (A) cuts once every 256 nucleotides and (B) 4096 nucleotides

(4) (A) cuts once every 256 nucleotides and (B) 1024 nucleotides

Ans : 3

8. Assertion (A): Events in pachytene play a key role in evolutionary changes in organisms.

Reason (R): Exchange of genetic material takes place between sister chromatids of homologous chromosomes.

(1) (A) and (R) are true (R) is correct explanation of (A)

(2) (A) and (R) are true, (R) is not the correct explanation of (A)

(3) (A) is true (R) is false (4) (A) is false (R) is true

Ans : 3

9. Match the following:

List – I

(A) Trichomes

(B) Trachoids

(C) Bast fibre

(D) Guard cells

List – II

(i) Gaseous exchange

(ii) Mechanical strength

(iii) Prevent water loss

(iv) Water conduction

(v) Synthesis of food

A

B

C

D

(1) (iii)

(v)

(iv)

(ii)

(2) (iii)

(iv)

(ii)

(i)

(3) (i)

(iv)

(ii)

(iii)

(4) (v)

(iii)

(iv)

(ii)

Ans : 2

10. In insertional inactivation of  $\beta$ -galactosidase gene, the bacteria in white colonies have

(1) Non-recombinant plasmid

(2) Recombinant plasmid

(3) No plasmid

(4) Linear foreign DNA

Ans : 2

11. A 'beads on a string' like chromatin with 200 beads or nucleosomes contains \_\_\_ bp of DNA.

(1) 80,000

(2) 40,000

(3) 20,000

(4) 10,000

Ans : 2

12. In an Angiosperm the number of micro scope mother cells involved in production of 120 male gametes is

(1) 30

(2) 60

(3) 15

(4) 40



Ans : 3

13. Match the following and choose the correct combination from the options given below:

Column A

- (A) Eubacteria  
 (B) Dinofalgellates  
 (C) Phycomycetes  
 (D) Deuteromycetes

Column B

- (I) Trichoderma  
 (II) Albugo  
 (III) Gonyaulax  
 (IV) Anabaena

- |          |       |       |      |
|----------|-------|-------|------|
| (A)      | (B)   | (C)   | (D)  |
| (1) (I)  | (II)  | (III) | (IV) |
| (2) (II) | (III) | (IV)  | (I)  |
| (3) (IV) | (III) | (II)  | (I)  |
| (4) (IV) | (III) | (I)   | (II) |

Ans : 3

14. Bryophytes are

- (1) Archegoniatae, tracheophytic, embryophytic  
 (2) Archegoniatae, tracheophytic, non-embryophytic  
 (3) Archegoniatae, atracheophytic, embryophytic  
 (4) Non-archegoniatae, atracheophytic, embryophytic

Ans : 3

15. Identify the characteristic features of diatoms.

- (1) Cell wall is made of cellulose, floating on water and produce auxospores  
 (2) Cell wall is made of chitin, fixed forms, and produce auxospores  
 (3) Cell wall is made of silica, floating on water and produce auxospores  
 (4) Cell wall is made of silica, symboints and produce zoospores

Ans : 3

16. Identify the right combination

- (1) Carrot – Tuberos root – Head inflorescence  
 (2) Onion – Bulb – Corymb  
 (3) Colocasia – Rhizome – Spadix  
 (4) Bougainvillea – Thorns – Cymule

Ans : 4

17. The chief edible part in (a) Groundnut (b) Jack fruit (c) Apple and (d) Mango fruits are

- (1) (a) Endosperm, (b) Inflorescence axis, (c) Mesocarp, (d) Endocarp  
 (2) (a) Cotyledons, (b) Succulent perianth, (c) fleshy thalamus, (d) mesocarp  
 (3) (a) Cotyledons, (b) Endosperm, (c) mesocarp, (d) fleshy thalamus  
 (4) (a) Cotyledons, (b) Fleshy thalamus, (c) Pericarp, (d) mesocarp



Ans : 2

18. Match the organism in column A with the Contents in Column B

Column A

- (A) Gracilaria  
 (B) Ectocarpus  
 (C) Marchantia  
 (D) Cycas

Column B

- (I) Biflagellate zoospores  
 (II) Elaters  
 (III) Biflagellate antherozoids  
 (IV) Carpogonium  
 (V) Multiciliated malegametes

A	B	C	D
(1) (I)	(IV)	(III)	(V)
(2) (IV)	(I)	(II)	(V)
(3) (IV)	(II)	(III)	(I)
(4) (IV)	(V)	(II)	(I)

Ans : 2

19. Assertion (A): Subaerial stem modifications participate in vegetative reproduction.

Reason (R): They store water and food

- (1) (A) and (R) are true (R) is correct explanation of (A)  
 (2) (A) and (R) are true, (R) is not the correct explanation of (A)  
 (3) (A) is true (R) is false (4) (A) is false (R) is true

Ans : 3

20. Different plants adopt various methods of pollination, match the plant with correct method of pollination.

I

- (A) Pisum sativum  
 (B) Commelina  
 (C) Water hyacinth  
 (D) Abutilon  
 (E) Solanum

II

- (I) Chasmogamy and cleistogamy  
 (II) Self pollination  
 (III) Cross pollination and self sterility  
 (IV) Protogyny and entomophily  
 (V) Entomophily and anemophily

Ans : 1

21. The pollen Grains can be stored in a viable condition for many years in the following conditions.

- (1) Anaerobic conditions in  $0^{\circ}\text{C}$   
 (2) Liquid Nitrogen ( $-196^{\circ}\text{C}$ )  
 (3) Liquid Nitrogen ( $0^{\circ}\text{C}$ )  
 (4) Liquid Hydrogen ( $(-196^{\circ}\text{C})$ )

Ans : 2

22. Read the following and identify correct combinations

Genus

Family

Character

(1) Datura

Solanaceae

Epipetaton's stamens



- |                |            |                         |
|----------------|------------|-------------------------|
| (2) Allium     | Solanaceae | Tricarpellary gynoecium |
| (3) Petunia    | Solanaceae | Didynamous stamens      |
| (4) Crotalaria | Fabaceae   | Diadelphous             |

Ans : 1

23. Identify the polypeptide subunits present in the adult human haemoglobin

- (1) Two  $\alpha$  type subunits and two  $\beta$  type subunits  
(2) Four  $\alpha$  type subunits  
(3) Four  $\beta$  type subunits  
(4) Three  $\alpha$  type subunits and one  $\beta$  type subunits

Ans : 1

24. Match the plants in column B with character in column A

Column A

- (A) Parthenocarpy  
(B) Polyembryony  
(C) Largest Seed  
(D) Seeds from Arctic tundra

Column B

- (i) Lodoecia  
(ii) Banana  
(iii) Mango  
(iv) Orchid  
(v) Lupinus

A	B	C	D
(1) (ii)	(iii)	(i)	(iv)
(2) (ii)	(iii)	(i)	(v)
(3) (iv)	(i)	(v)	(iii)
(4) (v)	(iii)	(iv)	(ii)

Ans : 2

25. Ribosomes are essential for protein synthesis, but they are present in Mitochondria and plastids, the sites of respiration and photosynthesis. What is the role of ribosomes in these cell organelles.

- (1) Ribosomes transport ATP formed in Respiration and photosynthesis to cytoplasm through E.R.  
(2) Sub units of some required proteins are synthesized in these organelles  
(3) Ribosomes transport RNA and DNA to cytoplasm  
(4) All the above are correct

Ans : 2

26. Identify the correct combination regarding Anaphase, Anaphase-I and Anaphase-II

- (1) Anaphase – centromere splits  
Anaphase – I – Centromere splits,  
Anaphase – II – Centromere splits  
(2) Anaphase – chromatids move to opposite poles;



Anaphase – I – Homologous chromosomes separate;

Anaphase – II – Centromere splits

(3) Anaphase – chromosomes cluster at opposite poles;

Anaphase – I Homologous chromosomes separate;

Anaphase – ii – Centromere splits

(4) Anaphase – chromosomes move to opposite poles;

Anaphase – I – Homologous chromosomes separate;

Anaphase – II – Centromere splits.

Ans : 2

27. Match the following

A

(A) Abrin

(B) GLUT – 4

(C) Collagen

(D) Concanavalin A

B

(i) Lectin

(ii) Intercellular ground substance

(iii) Hormone

(iv) Enables glucose transport into cells

(v) Toxin

A

(1) (iii)

(2) (v)

(3) (iii)

(4) (iii)

B

(iv)

(iv)

(iv)

(v)

C

(ii)

(ii)

(ii)

(ii)

D

(i)

(i)

(i)

(i)

Ans : 2

28. These cells are absent in phloem of gymnosperms

(1) Albuminous cells

(2) Companion cells

(3) Phloem parenchyma (4) Phloem fibre

Ans : 2

29. Periderm of stem includes

(1) Phelloderm, hypodermis and pericycle

(2) Phellogen, phellem, phelloderm

(3) Phellem, phelloderm and lenticels

(4) Phellem, phelloderm and pericycle2

Ans : 2

30. Match the following:

A

(A) Lemna

(B) Vallisneria

(C) Rhizophora

(D) Typha

B

(i) Halophyte

(ii) Free floating hydrophyte

(iii) Amphibious plant

(iv) Submerged rooted hydrophyte

A

B

C

D



- |          |       |      |       |
|----------|-------|------|-------|
| (1) (i)  | (iv)  | (ii) | (iii) |
| (2) (ii) | (iii) | (iv) | (i)   |
| (3) (ii) | (iv)  | (i)  | (iii) |
| (4) (ii) | (i)   | (iv) | (iii) |

Ans : 3

31. Assertion (A): Ethylene induces fruit ripening

Reason (R): Ethylene is a gaseous hormone.

- (1) (A) and (R) are true (R) is correct explanation  
 (2) (A) and (R) are true, (R) is not the correct explanation  
 (3) (A) is true (R) is false (4) (A) is false (R) is true

Ans : 2

32. Induction of cell division and delay in senescence is caused by

- (1) Cytokinin (2) I.A.A. (3) Gibberellins (4) N.A.A.

Ans : 1

33. Match the following:

- |                                |  |
|--------------------------------|--|
| A                              | B  |
| (A) Scotoactive stomata        | (i) Opening and closing of photoactive Stomata |
| (B) Guttation                  | (ii) Transpiration                             |
| (C) Tensile strength           | (iii) Water loss in liquid phase               |
| (D) K <sup>+</sup> pump theory | (iv) Night transpiration                       |
|                                | (v) Antitranspirant                            |

- |           |       |      |       |
|-----------|-------|------|-------|
| A         | B     | C    | D     |
| (1) (iv)  | (iii) | (ii) | (i)   |
| (2) (iv)  | (v)   | (ii) | (iii) |
| (3) (iii) | (iv)  | (v)  | (ii)  |
| (4) (iii) | (i)   | (iv) | (ii)  |

Ans : 1

34. The correct ascending sequence of the cells with respect to their water potential is

- |                 |           |           |           |
|-----------------|-----------|-----------|-----------|
| A               | B         | C         | D         |
| $\pi$ - 0.8 Mpa | - 1.0 MPa | - 0.9 MPa | - 0.3 MPa |
| P + 0.4 MPa     | + 0.5 MPa | + 0.2 MPa | + 0.2 MPa |
| (1) ABCD        | (2) CBAD  | (3) CABD  | (4) CDBA  |

Ans : 2

35. Conversion of organic nitrogen into Ammonia, Na<sub>2</sub> gas into ammonia, nitrates into ammonia, ammonia into nitrates respectively known as





- (1) Nitrogen fixation, nitrate reduction, Nitrification, ammonification
- (2) Ammonification, Nitrogenification, Nitrate reduction, Nitrification
- (3) Nitrification, Ammonification, Nitrogenfixation, Nitrate reduction
- (4) Nitrogenfixation, Nitrate reduction, Denitrification, Ammonification

Ans : 2

36. Choose the correct sequence of electron pathway in Electron Transport System.

- (1) Cyt oxidase → Cyt reductase → Succinichydrogenase → NADH dehydrogenase
- (2) NADH dehydrogenase → Succinic dehydrogenase → Cyt C reductase → Cyt C oxidase
- (3) NADH dehydrogenase → Cyt C reductase → Cyt C oxidase → O<sub>2</sub>
- (4) Succinic dehydrogenas → Cyt oxidase → Cyt reductase → O<sub>2</sub>

Ans : 3

37. Match the following

List – A

- (A) Oxidoreductases
- (B) Isomerases
- (C) Ligases
- (D) Lyases

List – B

- (i) Linking of two compounds
- (ii) Removal of groups from substrates
- (iii) Inter conversion of isomers
- (iv) Dehydrogenation
- (v) Hydrolysis

A	B	C	D
(1) (iv)	(i)	(iii)	(ii)
(2) (iv)	(iii)	(i)	(ii)
(3) (iii)	(iv)	(ii)	(v)
(4) (ii)	(v)	(iii)	(i)

Ans : 2

38. Choose the correct statement

- (1) Stroma lamella membrane lacks PSII and PSI
- (2) When PSI is functional electrons flow in a non cyclic way
- (3) ATPase enzyme consists of F<sub>0</sub> and F<sub>1</sub> units
- (4) NADP reductase is a part of PSII

Ans : 3

39. Match the following:

List – A

- (A) Mg
- (B) Mo
- (C) Mn
- (D) B

List – B

- (i) Splitting of H<sub>2</sub>O during photosynthesis
- (ii) Germination of Pollengrain
- (iii) Constituent of chlorophyll
- (iv) Component of Nitrate reductase



(v) Synthesis of Auxins

A	B	C	D
(1) (ii)	(v)	(iv)	(i)
(2) (iii)	(iv)	(ii)	(i)
(3) (iii)	(v)	(iv)	(i)
(4) (iii)	(iv)	(i)	(ii)

Ans : 4

40. Match the following:

A

(A) Statins

(B) Cyclosporin – A

(C) Streptokinase

(D) Lipase

B

(i) Remove the clots in blood vessels

(ii) Competitive inhibitor of cholesterol synthesizing enzyme

(iii) Immuno suppressant

(iv) Soap industry to remove oil strains

A

B

C

D

(1) (ii)	(iii)	(i)	(iv)
(2) (iv)	(ii)	(iii)	(i)
(3) (iii)	(ii)	(iv)	(i)
(4) (iv)	(i)	(iii)	(ii)

Ans : 1

**ZOOLOGY**

41. Identify the set of hormones that are not antagonistic in function

(1) Melanocyte stimulating hormone – Melatonin

(2) Calcitonin – Parathormone

(3) Adrenaline – Noradrenaline

(4) Insulin – Glucagon

Ans : 3

42. Antigen binds to this part of antibody

(1) Paratope

(2) Epitope

(3) Fc fragment

(4) Fab fragment

Ans : 1

43. Match the following

List – I

(A) Syphilis

(B) Genital warts

List – II

(I) Human papilloma virus

(II) HBV



(C) Hepatitis – B

(III) Treponema pallidum

(D) Gonorrhoea

(IV) HSV (Herpes simplex Virus)

(V) Neisseria

	A	B	C	D
(1)	(II)	(I)	(IV)	(V)

	A	B	C	D
2)	(III)	(I)	(IV)	(V)

(3)	(III)	(I)	(II)	(V)
-----	-------	-----	------	-----

4)	(II)	(III)	(IV)	(V)
----	------	-------	------	-----

Ans : 3

44. Study the following and identify the correct combinations

Extra embryonic Membrane	Formed by	Function
(A) Amnion	Somatopleure	Protection
(B) Allantois	Splanchnopleure	Placenta formation
(C) Yolk sac	Mid gut	Nutrition
(D) Chorion	Outer wall of amniotic folds	Excretion
(1) A, B	(2) B, D	(3) A, C
		(4) B, C

Ans : 1

45. Identify the complete and correct sequence in the passage of spermatozoa.

- (1) Seminiferous tubules → Retetestis → Vasa efferentia → Vas deferens → Epididymis → Ejaculatory duct → Urethra → Vagina of female
- (2) Seminiferous tubules → Retetestis → Vasa efferentia → Epididymis → Vas Deferens → Ejaculatory duct → Urethra → Vagina of female.
- (3) Seminiferoustubules → Retetestis → Vasa efferentia → Epididymis → Urethra → Vagina of female
- (4) Seminiferous tubules → Retetestis → Vasa efferentia → Ejaculatory duct → Vagina of female

Ans : 2

46. A person with 44A + XXY chromosome setup has gynecomastia and are Barr body positive. They have symptoms of

- |                      |                           |
|----------------------|---------------------------|
| (1) Turners syndrome | (2) Klinefelters syndrome |
| (3) Down syndrome    | (4) Edwards syndrome      |

Ans : 2

47. Drosophila with the genotype AAA + XX is

- |                 |                   |               |              |
|-----------------|-------------------|---------------|--------------|
| (1) Normal male | (2) Normal female | (3) Inter sex | (4) Metamale |
|-----------------|-------------------|---------------|--------------|

Ans : 3

48. Find out the mismatched pair



- (1) Lyonization - Liane Russell and Mary Lyon  
(2) Y- Chromosome - Stevens and Wilson  
(3) X- body - Henking  
(4) Shot gun sequencing - Jeffreys

Ans : 4

49. Wings of butterfly and wings of birds are examples, for

- (1) Vestigial organs (2) Analogous organs  
(3) Homologous organs (4) Atavistic organs

Ans : 2

50. Which of the following shows similarity with first man ?

- (1) *Homo neanderthalensis* (2) *Australopithecus*  
(3) *Homo erectus* (4) *Homo habilis*

Ans : 4

51. Guardian angel of genome is

- (1) P<sup>RB</sup> (2) P<sup>53</sup> protein (3) T<sub>4</sub> cell (4) Interleukin – I

Ans : 2

52. In poultry, antibiotics are used to treat

- (1) Infectious coryza (2) Gumboro disease  
(3) Brooders Pneumonia (4) Aflatoxicosis

Ans : 1

53.  $\alpha$ -1 antitrypsin is used to treat

- (1) Metasema (2) Polysema (3) Emphysema (4) Colysema

Ans : 3

54. Assertion (A) : Hormones interacting with cell surface receptors do not enter the target but they generate second messengers

Reason (R) : Glucocorticoids bind to the intracellular receptors and regulate the gene expression

- (1) Both A and R are true and R is the correct explanation of A  
(2) Both A and R are true but R is not the correct explanation of A  
(3) A is true but R is false (4) A is false but R is true

Ans : 2

55. The correct sequence of taxa is

- (1) Class – order – family – species – genus  
(2) Class – family – order – species – genus  
(3) Phylum – order – class- - species – genus  
(4) Phylum – class – order – genus – species



Ans : 4

56. Latest and 17 th biosphere reserve in India is

- (1) Silent valley (2) Seshachalam hills  
(3) Aravalli hilss (4) Sarguja, Bastar

Ans : 2

57. Wharton's jelly present in umbilical cord is an example for

- (1) Adipose tissue (2) Mucus connective tissue  
(3) Areolar tissue (4) Elastic connective tissue

Ans : 2

58. Assertion (A) : In cardiac muscles, impulses are transmitted radpidly

Reason (R) : Gap junctions allow quick passage of ions from one cell to the other.

- (1) Both A and R are true and R is the correct explanation of A  
(2) Both A and R are true but R is not the correct explanation of A  
(3) A is true but R is false (4) A is false but R is true

Ans : 1

59. The glial cells which help in providing blood – brain barrier are

- (1) Astrocytes (2) Ependymal cells  
(3) Microglial cells (4) Oligodendrocytes

Ans : 1

60. Study the following and choose the correct pair.

Class	Feature	Example	
(A) Cephalopoda	Closed circulatory system	<i>Pinctada</i>	
(B) Echinoidea	Aristole's Lantern	Sea- Urchin	
(C) Tentaculata	Cnidoblasts	Pleurobrachia	
(D) Hexactinellida	Siliceous spicules	Venus' flower basket	
(1) (B), (D)	(2) (A), (D)	(3) (C), (D)	(4) (A), (C)

Ans : 1

61. The Molluscan without shell

- (1) *Sepia* (2) *Octopus* (3) *Loligo* (4) *Nautilus*

Ans : 2

62. Study the following statements about chordate

- (A) Columella auris present in the middle ear of amphibians is modified hyomandibula of fishes.  
(B) Reptiles lay cleidoic egg  
(C) *Sphenodon* is a connecting link between amphibians and reptiles  
(D) *Panthera tigris* is an extinct animal of India.



From the above, identify the correct statements.

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

Ans : 3

63. The character not related to chondrichthyes is

- (1) Claspers    (2) Placoid scales  
(3) Filamentous gills    (4) Heterocercal caudal fin

Ans : 3

64. Assertion (A) : It is necessary to study the life history of an ascidian to consider it as chordate

Reason (R) : Tadpole larva of ascidians has a notochord that disappears in the adult.

- (1) Both A and R are true and R is the correct explanation of A  
(2) Both A and R are true but R is not the correct explanation of A  
(3) A is true but R is false    (4) A is false but R is true

Ans : 1

65. Kiny system is present in

- (1) Flagellates                      (2) Sarcodines                      (3) Ciliates                      (4) Sporozoans

Ans : 3

66. Nocturnal periodicity is exhibited by

- (1) *Wuchereria*                      (2) *Ascaris*                      (3) Rhabditiform larva                      (4) *Microfilaria*

Ans : 4

67. Which one of the following statements is correct ?

- (1) Benign tumors show the property of metastasis  
(2) Heroin accelerates body functions  
(3) Malignant tumor exhibit metastasis  
(4) Patients who have undergone surgery are given cannabinoids

Ans : 3

68. Match the following

- |                                  |                          |
|----------------------------------|--------------------------|
| (A) <i>Entamoeba histolytica</i> | (I) Cytotoxic parasite   |
| (B) <i>Plasmodium</i>            | (II) Coelozoic parasite  |
| (C) <i>Wuchereria</i>            | (III) Rhabditiform larva |
| (D) Extraintestinal migration    | (IV) Monogenic parasite  |
|                                  | (V) Lymphadenitis        |

The correct match is

- |                        |                        |                        |                       |   |   |   |   |
|------------------------|------------------------|------------------------|-----------------------|---|---|---|---|
| A                      | B                      | C                      | D                     | A | B | C | D |
| (1) (IV) (V) (I) (III) | (2) (IV) (I) (V) (III) | (3) (V) (I) (II) (III) | (4) (IV) (II) (V) (I) |   |   |   |   |



Ans : 2

69. Which of the following statements is incorrect pertaining to cockroach ?

- (1) Ostia have valves which allow the blood to pass only into the heart
- (2) Thoracic and abdominal spiracles are valvular
- (3) The wall of the trachea is made with lamina propria, endothelium and taenidia
- (4) The taenidia keeps the trachea always open and prevent it from collapsing

Ans : 3

70. Which among the following are the fat secreting cells present in the haemocoel of cockroach ?

- (1) Trophocytes      (2) Urate cells      (3) Mycetocytes      (4) Oenocytes

Ans : 4

71. Which of the following rule states that with the increase of every 10°C temperature, the rate of metabolic activity gets doubled

- (1) Van't Hoff's rule    (2) Bergman's rule    (3) Allen's rule    (4) Jordon's rule

Ans : 1

72. Match the following

- |                       |   |
|-----------------------|---|
| A) Eutrophication     | I) Rise in sea level  |
| B) Biomagnification   | II) Water Hyacinth  |
| C) Terror of Bengal   | III) Increase of quantity of pollutant at successive trophic levels |
| D) Green house effect | IV) Enrichment with nutrients                                       |

The correct answer is :

- |        |     |    |    |        |     |     |    |
|--------|-----|----|----|--------|-----|-----|----|
| A      | B   | C  | D  | A      | B   | C   | D  |
| (1) IV | III | I  | II | (2) I  | II  | III | IV |
| (3) II | III | IV | I  | (4) IV | III | II  | I  |

Ans : 4

73. Choose the wrong combinations among the following

S.No.	Interaction	Species A	Species B
A	Mutualism	+	+
B	Commensalism	+	O
C	Parasitism	+	+
D	Competition	O	-

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

Ans : 3

74. Match the following



List – I

- A) *Arenicola*
- B) *Hirudinaria*
- C) *Pontobdella*
- D) *Haemadipsa*

A B C D

- (1) I II III IV
- (3) II III IV I

Ans : 2

75. Match the following

List – I

- A) Cardiac glands
- B) Pyloric glands
- C) Peptic cells
- D) Parietal cells

The correct answer is

A B C D

- (1) III II IV I
- (3) III I II IV

Ans : 1

76. In man during inspiration air passes through

- (1) Nasal chamber – Larynx – Pharynx – Trachea – Bronchioles – Alveoli – Glottis
- (2) Nasal chamber – Pharynx – Larynx – Trachea – Bronchioles – Bronchi – Alveoli
- (3) Nasal chamber – Larynx – Pharynx – Trachea – Alveoli – Bronchioles – Glottis
- (4) Nasal chamber – Pharynx – Larynx – Trachea – Bronchi – Bronchioles – Alveoli

Ans : 4

77. What will be the number of heart beats per minute, if the stroke volume of heart increases with the total volume of blood remains same

- (1) Remains constant
- (2) Decreases
- (3) Increases
- (4) Becomes erratic

Ans : 2

78. Choose the correct one regarding urinary excretion

- (1) Urinary excretion → Glomerular filtration - Tubular reabsorption + Tubular secretion
- (2) Urinary excretion → Tubular reabsorption + Glomerular filtration – Tubular secretion
- (3) Urinary excretion → Tubular secretion + Tubular reabsorption
- (4) Urinary excretion → Tubular secretion – Glomerular filtration



Ans : 1

79. Thin filaments of a myofibril are made up of

- (1) Actin, Troponin, Tropomyosin                      (2) Actin, Troponin  
 (3) Myosin, Troponin                                      (4) Actin, Tropomyosin

Ans : 1

80. Read the following statements

- A) Midbrain, Pons varolii and medulla oblongata are together called brain stem  
 B) Paracoels are connected to diocoel through iter  
 C) Heartbeat, respiration, swallowing, cough related centers lie in medulla oblongata  
 D) Cerebellum is also called gyroscope of the body

Among the above correct statements are :

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

Ans : 2

**PHYSICS**

81. A parallel plate capacitor has 91 plates, all are identical and arranged with same spacing between them. If the capacitance between adjacent plates is 3pF. What will be the resultant capacitance ?

- 1) 273 pF                      2) 30 pF                      3) 94 pF                      4) 270 pF

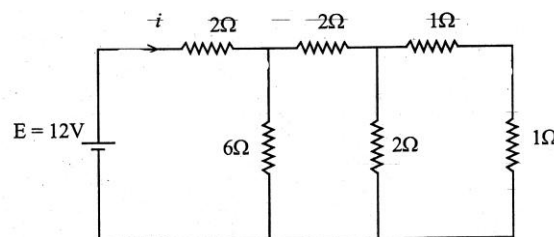
Ans : 4

82. A  $1\Omega$  resistance in series with an ammeter is balanced by 75 cm of potentiometer wire. A standard cell of emf 1.02 V is balanced by 50 cm. The ammeter shows a reading of 1.5A. Then the error in ammeter reading is

- 1) 0.03 A                      2) 3 A                      3) 1.3 A                      4) 0.3 A

Ans : 1

83. A battery of 12 V is connected in the circuit as shown in figure. Find the magnitude of current 'i'.



- 1) 1A                      2) 2A                      3) 3A                      4) 4A

Ans : 3



84. A rectangular copper coil is placed in uniform magnetic field of induction 40 mT with its plane perpendicular to the field. The area of the coil is shrinking at a constant rate of  $0.5 \text{ m}^2\text{s}^{-1}$ . The emf induced in the coil is

- 1) 10 mV                      2) 20 mV                      3) 80 mV                      4) 40 mV

Ans : 2

85. The range of voltmeter is 10V and its internal resistance is  $50\Omega$ . To convert it to a voltmeter of range 15V, how much resistance is to be added ?

- 1) Add  $25 \Omega$  resistor in parallel                      2) Add  $25 \Omega$  resistor in series  
3) Add  $125 \Omega$  resistor in parallel                      4) Add  $125 \Omega$  resistor in series

Ans : 2

86. A bar magnet has a coercivity of  $4 \times 10^3 \text{ Am}^{-1}$ . It is placed inside a solenoid of length 12cm having 60 turns in order to demagnetize it. The amount of current that should be passed through the solenoid is

- 1) 16 A                      2) 8 A                      3) 4 A                      4) 2 A

Ans : 2

87. Match the following

Quantity

Formula

- |   |  |
|---|--|
| 1) Magnetic flux linked with a coil                                       | a) $-N \frac{d\phi}{dt}$                 |
| 2) Induced emf  | b) $\mu_r \mu_0 n_1 n_2 \pi r_1^2 l$     |
| 3) Force on a charged particle moving<br>In a electric and magnetic field | c) $BA \cos \theta$                      |
| 4) Mutual inductance of a solenoid  | d) $q(\vec{E} + \vec{v} \times \vec{B})$ |

- 1) 1-c, 2-d, 3-b, 4-a      2) 1-c, 2-a, 3-d, 4-b      3) 1-b, 2-a, 3-c, 4-d      4) 1-a, 2-b, 3-d, 4-c

Ans : 2

88. The electric current in A.C. circuit is given by the relation  $i = 3 \sin \omega t + 4 \cos \omega t$ . The rms value of the current in the circuit is in amperes

- 1)  $\frac{5}{\sqrt{2}}$                       2)  $5\sqrt{2}$                       3)  $5\sqrt{2}$                       4)  $\frac{1}{\sqrt{2}}$

Ans : 1



89. 5% of the power of 200w bulb is converted into visible radiation. The average intensity of visible radiation at a distance of 1m from the bulb is

- 1)  $0.5 \text{ w/m}^2$       2)  $0.8 \text{ w/m}^2$       3)  $0.4 \text{ w/m}^2$       4)  $2 \text{ w/m}^2$

Ans : 2

90. When a light beam of frequency  $\nu$  is incident on a metal, photo electrons are emitted. If these electrons describe a circle of radius r in a magnetic field of strength B, then the work function of the metal is

- 1)  $h\nu + \frac{Ber}{2me}$       2)  $h\nu - \frac{(Ber)^2}{2me}$       3)  $h\nu + \frac{(Ber)^2}{2me}$       4)  $h\nu - \frac{Ber}{2me}$

Ans : 2 / no answer

91. The distance of closet approach of an  $\alpha$  - particle fired at nucleus with momentum P is d. The distance of closet approach when the  $\alpha$  - particle is fired at same nucleus with momentum 3P will be

- 1) 3d      2) d/3      3) 9 d      4) d/9

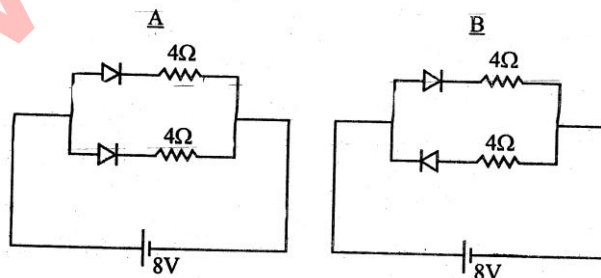
Ans : 4

92. In a nuclear reactor the number of  $U^{235}$  nuclei undergoing fissions per second is  $4 \times 10^{20}$ . If the energy released per fission is 250 MeV, the total energy released in 10 hours is ( $1.ev = 1.6 \times 10^{-19} \text{ J}$ )

- 1)  $576 \times 10^6 \text{ J}$       2)  $576 \times 10^{12} \text{ J}$       3)  $576 \times 10^{15} \text{ J}$       4)  $576 \times 10^{18} \text{ J}$

Ans : 2

93. Current flowing in each of the following circuits A and B respectively are the forward resistance of diodes)



- 1) 1 A and 2 A      2) 2 A and 1A      3) 4 A and 2 A      4) 2 A and 4A

Ans : 3

94. A message signal of frequency 20 kHz is used to modulate a carrier of figure 1.5 MHz. The side bands produced are

- 1) 520 Hz, 480 kHz      2) 1520 kHz, 1480 kHz



3) 1500 kHz, 20 kHz

4) 1020 kHz, 980 kHz

Ans : 2

95. If energy (E), force (F) and linear momentum (P) and fundamental quantities, then match the following and give correct answer.

A

B

Physical quantity

Dimensional formula

a) Mass

d)  $E^0 F^{-1} P^1$ 

b) Length

e)  $E^{-1} F^0 P^2$ 

c) Time

 $E^{-1} F^0 P^2$ 

1) a-d, b-e, c-f

2) a-f, b-e, c-d

3) a-e, b-f, c-d

4) a-e, b-d, c-f

Ans : 3

96. A vehicle moving with a constant acceleration from A to B in a straight line AB, has velocities 'u' and 'v' at A and B respectively. C is the mid point of AB. If time taken to travel from A to C is twice the time to travel from C to B then the velocity of the vehicle 'v' at B is

1) 5u

2) 6u

4) 7u

4) 8u

Ans : 3

97. An object is thrown towards the tower which is at a horizontal distance of 50 m with initial velocity of  $10\text{ms}^{-1}$  and making an angle  $30^\circ$  with the horizontal. The object the tower at certain height. The height from and bottom of the tower where the object the tower is ( $g=10\text{ms}^{-2}$ )

1)  $\frac{50}{\sqrt{3}} \left[ 1 - \frac{10}{\sqrt{3}} \right] m$     2)  $\frac{50}{3} \left[ 1 - \frac{10}{\sqrt{3}} \right] m$     3)  $\frac{100}{\sqrt{3}} \left[ 1 - \frac{10}{\sqrt{3}} \right] m$     4)  $\frac{100}{3} \left[ 1 - \frac{10}{\sqrt{3}} \right] m$

Ans : 1

98. A body is mass 5 kg is projected with a velocity 'u' at an angle  $45^\circ$  to the horizontal. The magnitude of angular momentum of the body when it is at the highest position with respect to the point of projection is

1)  $\frac{u^3}{5\sqrt{5}g}$     2)  $\frac{5u^3}{4\sqrt{2}g}$     3)  $\frac{u^3}{5g}$     4)  $\frac{u^3}{\sqrt{5}g}$

Ans : 2



99. A balloon of mass 10kg is raising up with an acceleration of  $20\text{ms}^{-2}$ . If a mass of 4 kg removed from the balloon its acceleration becomes (take  $g=10\text{ms}^{-2}$ )

- 1)  $40\text{ms}^{-2}$                       2)  $20\text{ms}^{-2}$                       3)  $30\text{ms}^{-2}$                       4)  $12\text{ms}^{-2}$

Ans : 1

100. A uniform chain of length ' $\ell$ ' is placed on a smooth horizontal table, such that half of its length hangs over one edge. It is released from rest, the velocity with which it leaves the table is

- 1)  $\sqrt{\frac{3gl}{4}}$                       2)  $\sqrt{\frac{3gl}{2}}$                       3)  $\sqrt{\frac{2gl}{3}}$                       4)  $\sqrt{\frac{gl}{3}}$

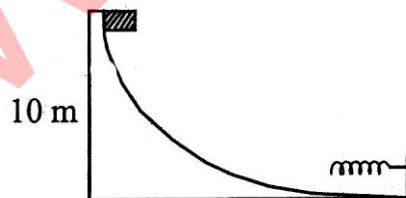
Ans : 1

101. Two cylindrical vessels of equal cross sectional area A, contain liquid of density  $\rho$ , upto the heights  $h_1$  and  $h_2$ . After inter connection the levels become equal then work done by force of gravity in this process is

- 1)  $\rho A \left( \frac{h_1 - h_2}{2} \right)^2 g$     2)  $\rho A \left( \frac{h_1 - h_2}{2} \right) g$     3)  $\rho A \left( \frac{h_1 + h_2}{2} \right) g$     4)  $\rho A (h_1 - h_2) g$

Ans : 1

102. A smooth curved surface of height 10m is ended horizontal. A spring of force  $200\text{Nm}^{-1}$  is fixed at the horizontal end as shown in figure when an object of mass 10g is released from the top, it travels along the curved path and collides with the spring. The maximum compression in the spring is ( $g = 10\text{ms}^{-2}$ )



- 1) 10 m                      2) 0.1 m                      3) 1m                      4) 0.01. m

Ans : 2

103. The ratio of the radii of gyration of the disc about its axis and about a tangent per to its plane will be

- 1)  $\frac{1}{\sqrt{3}}$                       2)  $\sqrt{\frac{3}{2}}$                       3)  $\frac{1}{\sqrt{2}}$                       4)  $\sqrt{\frac{5}{3}}$

Ans : 1



104. A solid sphere of radius 'r' is rolling on a horizontal surface. The ratio between the kinetic energy and total energy

- 1)  $\frac{5}{7}$                       2)  $\frac{2}{7}$                       3)  $\frac{1}{2}$                       4)  $\frac{1}{7}$

Ans : 2

105. A copper sphere attached to the bottom of a vertical spring is oscillating with time period 10sec. If the copper sphere is immersed in a fluid (assume the viscosity of the fluid is negligible) of specific gravity  $\frac{1}{4}$  of that of the copper, then time period of the oscillation is

- 1) 5 sec                      2) 10 sec                      3) 2.5 sec                      4) 20 sec

Ans : 2

106. Two spheres of masses 16 kg and 4 kg are separated by a distance 30 m on a table. Then the distance from sphere of mass 16 kg at which the net gravitational force becomes zero is

- 1) 10 m                      2) 20 m                      3) 15 m                      4) 5m

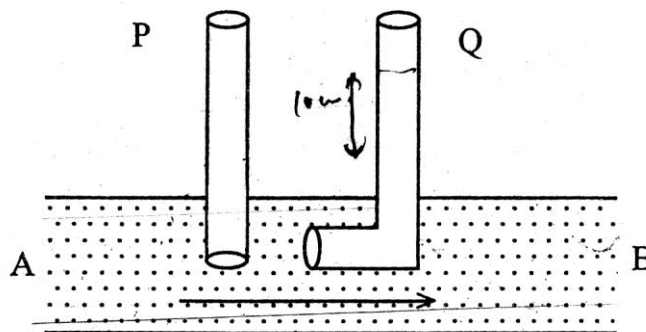
Ans : 2

107. A soap bubble of diameter a is produced using the soap solution of surface tension 'T'. Find the energy required to double the radius of the bubble without change of temperature

- 1)  $2\pi a^2 T$                       2)  $6\pi a^2 T$                       3)  $3\pi a^2 T$                       4)  $12\pi a^2 T$

Ans : 2

108. A liquid flows along a horizontal pipe AB of uniform cross-section. The difference between the level of the liquid in tubes P and Q is 10cm. The diameter of the tubes P and Q the same. Then ( $g = 9.8ms^{-2}$ )



- 1) Level in P is greater than that of Q and velocity of flow is 1.4 m/s



- 2) Level in Q is greater than that of P and velocity of flow is 1.4 m/s  
3) Level in P is greater than that of Q and velocity of flow is 0.7 m/s  
4) Level in Q is greater than that of P and velocity of flow is 0.7 m/s

Ans : 2

109. A pan ;filled with hot food cool from  $94^{\circ}C$  to  $86^{\circ}C$  in 2 minutes. When the root temperature is at  $20^{\circ}C$  , the time taken to cool from  $71^{\circ}C$  to  $69^{\circ}C$  is

- 1) 50 sec                      2) 40 sec                      3) 38 sec                      4) 42 sec

Ans : 4

110. Two metals rods of lengths,  $L_1$  and  $L_2$  and co-efficients of linear expansion  $\alpha_1$  and  $\alpha_2$  respectively are welded together to make a composite rod of length  $(L_1 + L_2)$  at  $0^{\circ}C$  . Find the effective co-efficient of linear expansion of the composite rod.

- 1)  $\frac{L_1\alpha_1^2 - L_2\alpha_2^2}{L_1^2 + L_2^2}$                       2)  $\frac{L_1^2\alpha_1 - L_2^2\alpha_2}{L_1^2 + L_2^2}$                       3)  $\frac{L_1\alpha_1 + L_2\alpha_2}{L_1 - L_2}$                       4)  $\frac{L_1\alpha_1 + L_2\alpha_2}{L_1 + L_2}$

Ans : 4

111. An ideal diatomic gas is heated at constant pressure. What fraction of heat energy is utilized to increase its internal energy ?

- 1)  $\frac{5}{7}$                       2)  $\frac{2}{5}$                       3)  $\frac{3}{5}$                       4)  $\frac{3}{7}$

Ans : 1

112. If the pressure of the gas contained in a vessel is increased by 0.4%, when heated through  $1^{\circ}C$  . What is the initial temperature of the gas ?

- 1) 250K                      2)  $250^{\circ}C$                       3) 2500K                      4)  $25^{\circ}C$

Ans : 1

113. Specific heat of one mole of Hydrogen at constant pressure and at constant volume are  $450 \text{ JK}^{-1}$  and  $300 \text{ JK}^{-1}$  respectively. Then what is the density of the gas at S.T.P

- 1)  $(P_{\text{atm}} = 1.013 \times 10^5 \text{ Nm}^{-2})$   
1)  $2.47 \text{ kg} / \text{m}^3$                       2)  $3.0 \text{ kg} / \text{m}^3$                       3)  $3.58 \text{ kg} / \text{m}^3$                       4)  $4.0 \text{ kg} / \text{m}^3$

Ans : No answer



114. In a medium in which a transverse progressive wave travelling the phase different between the points with a separation of 1.25 cm is  $\frac{\pi}{4}$ . If the frequency of wave 1000 Hz, the velocity in the medium is
- 1)  $10^4 \text{ ms}^{-1}$       2)  $125 \text{ ms}^{-1}$       3)  $100 \text{ ms}^{-1}$       4)  $10 \text{ ms}^{-1}$

Ans : 3

115. Two wires of the same diameter and same material have length 1.2 m and 2m, vibration with the same fundamental frequency. If the shorter wire is stretched by a force 36 kg wt, then the tension in the longer wire is
- 1) 50 kg wt      2) 200 kg wt      3) 100kg wt      4) 400 kg wt

Ans : 3

116. The object and the image are at distance of 9 cm and 16 cm respectively from the force an equiconvex lens of radius of curvature 12 cm. The refractive index of the material the lens is
- 1) 1.45      2) 1.5      3) 1.55      4) 1.6

Ans : 2

117. A plane wave of wavelength  $6250 \text{ \AA}$  is incident normally on a slit of width  $2 \times 10^{-2} \text{ cm}$ . The width of the principle maximum of diffraction pattern on a screen at a distance of 50 cm will be
- 1)  $312 \times 10^{-3} \text{ cm}$       2)  $312.5 \times 10^{-4} \text{ cm}$       3) 312 cm      4)  $312.5 \times 10^{-5} \text{ cm}$

Ans : 1

118. A Gaussian surface in the cylinder of cross section ' $\pi a^2$ ' and length 'L' is immersed in a uniform electric field  $\vec{E}$  with the cylinder axis parallel to the field. The flux ' $\phi$ ' of the electric field through the closed surface is
- 1)  $2\pi a^2 \vec{E}$       2)  $\pi a^2 \vec{E} L$       3)  $\pi a^2 (2 + L) \vec{E}$       4) zero

Ans : 4

119. A total charge of  $5 \mu\text{C}$  is distributed uniformly on the surface of the thin walled semispherical cup. If the electric field strength at the centre of the semisphere is  $9 \times 10^8 \text{ NC}^{-1}$  the radius of the cup is

$$\left( \frac{1}{4\pi \epsilon_0} = 9 \times 10^9 \text{ Nm}^2 \text{C}^{-2} \right)$$

- 1) 5 mm      2) 10 mm      3) 5 cm      4) 10 cm





Ans : 1

120. The potential difference between the plates of a capacitor is increased by 20%. The energy stored on the capacitor increases by

- 1) 20%                      2) 22%                      3) 40%                      4) 44%

Ans : 4

### CHEMISTRY

121. Pick the correct statement

- (1) CO which is major pollutant resulting from the combustion of fuels in automobiles plays a major role in photo chemical smog  
(2) Photochemical smog occurs in day time whereas classical smog occurs in early morning  
(3) Classical smog has an oxidizing character while photochemical smog has reducing character  
(4) Classical smog is good for health but not photochemical smog

Ans : 2

122. Benzene on ozonolysis followed by reaction with  $Zn + H_2O$  gives

- (1) 3 moles of glycerol                      (2) 3 moles of glyoxal  
(3) 3 moles of glyoxalic acid              (4) 3 moles of acetylene

Ans : 2

123. Alkanes having odd carbons cannot be prepared in

- A) Wurtz reaction                      B) Frankland reaction  
C) Kolbe's electrolysis                D) Sabatier – sendersen reaction  
(1) B, C and D                      (2) A, C and D                      (3) A, B and D                      (4) A, B and C

Ans : 4

124.  $1\text{-Butene} + \text{HBr} \xrightarrow[\text{hv}]{\text{H}_2\text{O}_2} 1\text{-Bromo Butane}$

The above reaction follows

- (1) Markownikoff's rule                      (2) Saytzeff's rule  
(3) Anti Markownikoff's rule                (4) Hoffmann's rule

Ans : 3

125. Which one of the following has both schottky and Frenkel defects

- (1) AgBr                      (2) ZnO                      (3) NaCl                      (4) KCl

Ans : 1

126. For a dilute solution, Raoult's law states that :

- (1) The relative lowering of vapour pressure is equal to the mole fraction of solute  
(2) The relative lowering of vapour pressure is equal to the mole fraction of solvent



(3) The relative lowering of vapour pressure is proportional to the amount of solute in solution

(4) The vapour pressure of the solution is equal to the mole fraction of solvent

Ans : 1

127. Assertion (A) : 0.1M KCl, 0.1M  $K_2SO_4$  solutions cause the same osmotic pressure in solution

Reason (R) : Osmotic pressure depends on the number of particles present in the solution

(1) Both A and R are correct and R is the correct explanation of A.

(2) Both A and R are correct but R is not the correct explanation of A.

(3) A is True but R is False.

(4) R is True but A is False.

Ans : 4

128. The emf of the following three galvanic cells are represented by  $E_1$ ,  $E_2$  and  $E_3$  respectively. Which of the following is correct ?

i)  $Zn/Zn^{2+}(1M) \parallel Cu^{2+}(1M)/Cu$

ii)  $Zn/Zn^{2+}(0.1M) \parallel Cu^{2+}(1M)/Cu$

iii)  $Zn/Zn^{2+}(1M) \parallel Cu^{2+}(0.1M)/Cu$

(1)  $E_1 > E_2 > E_3$

(2)  $E_3 > E_2 > E_1$

(3)  $E_3 > E_1 > E_2$

(4)  $E_2 > E_1 > E_3$

Ans : 4

129. The rate of reaction  $A \rightarrow$  products is 10mole/lit/min at time  $(t_1) = 2$  min . What will be the rate in mole/lit/min at time  $(t_2) = 12$  min

(1) more than 10

(2) 10

(3) less than 10

(4) 20

Ans : 3

130. As the size of gold particle increases the colour of solution varies as

(1) Purple  $\rightarrow$  blue  $\rightarrow$  golden  $\rightarrow$  red

(2) Golden  $\rightarrow$  red  $\rightarrow$  purple  $\rightarrow$  blue

(3) Red  $\rightarrow$  purple  $\rightarrow$  blue  $\rightarrow$  golden

(4) Blue  $\rightarrow$  purple  $\rightarrow$  golden  $\rightarrow$  red

Ans : 3

131. Which of the following ore is used for the extraction of Zinc ?

(1) Bauxite

(2) Magnetite

(3) Malachite

(4) Sphalerite

Ans : 4

132. Nitrogen has unique ability to form  $P\pi - P\pi$  multiple bonds with itself and with other elements due to

(1) Small size and low electronegativity

(2) Large size and high electronegativity

(3) Large size and low electronegativity

(4) Small size and high electronegativity

Ans : 4

133. Which of the following statement is incorrect ?

(1) 4d, 5d, metals show higher enthalpies of atomization than those of 3d metals

(2)  $d^5$  configuration favours strong bonding between metal atom in d block

(3) Gold has higher melting point than copper and silver



(4) Mn has no close packed structure like the others in 3d series

Ans : 3

134. Assertion (A) : The difference in the successive oxidation states exhibited by transition elements is unity only

Reason (R) : d orbitals of transition elements are incompletely filled

(1) Both A and R are correct and R is the correct explanation of A.

(2) Both A and R are correct but R is not the correct explanation of A.

(3) A is True but R is False.

(4) R is True but A is False.

Ans : 1

135. Which of the following exhibits linkage isomerism ?

(1)  $[CO(NH_3)_5SO_4]Br$

(2)  $[CO(H_2O)_6]Cl_3$

(3)  $[CO(NH_3)_5(NO_2)]Cl_2$

(4)  $[CO(NH_3)_6][Cr(CN)_6]$

Ans : 3

136. Which chlorine oxide is used as bleaching agent for paper pulp and textiles ?

(1)  $ClO_2$

(2)  $Cl_2O$

(3)  $Cl_2O_6$

(4)  $Cl_2O_7$

Ans : 1

137. Which of the following polymers has heterocyclic ring ?

(1) Bakelite

(2) Melamine

(3) Buna - S

(4) Terylene

Ans : 2

138. The bases that are common in both RNA and DNA are

(1) Adenine, Guanine, Thymine

(2) Adenine, Uracil, Cytosine

(3) Adenine, Guanine, Cytosine

(4) Guanine, Uracil, Thymine

Ans : 3

139. The antibiotic having  $\beta$  - Lactam ring

(1) Penicillin

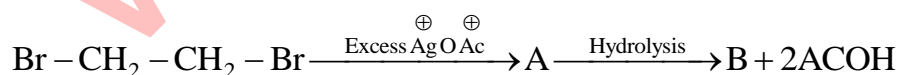
(2) Chloramphenicol

(3) Streptomycin

(4) Ciproflaxacin

Ans : 1

140. Identify A and B respectively in the following reaction



(1) 1, 2 - Diacetoxy ethane and 1, 2 - Dibromo ethane

(2) 1, 2 - Diacetoxy ethane and Ethylene glycol

(3) Ethylene glycol and Glycerol

(4) Ethylene glycol and 1, 2 - Diacetoxy ethane

Ans : 2

141. Predict the increasing order of acidity in the following compounds



- (1) Phenol < paracresol < paranitrophenol < metanitrophenol  
(2) Paracresol < phenol < metanitrophenol < paranitrophenol  
(3) Metanitrophenol < paranitrophenol < paracresol < phenol  
(4) Paranitrophenol < metanitrophenol < paracresol < phenol

Ans : 2

142. Tertiary butyl methyl ether on treatment with HI forms

- (1) Isobutane and Methyl iodide (2) Isobutanol and Methanol  
(3) Tertiary Butyl iodide and Methanol (4) Tertiary Butyl iodide and Methyl iodide

Ans : 3

143. The major gaseous product obtained in the following reaction is

- (1)  $CH_3 - N = C = O$  (2)  $CH_3 - C \equiv N$   
(3)  $CH_3 - NH - CO - NH - CH_3$  (4)  $CH_3NHC OCH_3$

Ans : 1

144. What are the total number of orbitals and electrons from  $m = 0$ , if there are 30 protons in an atom

- (1) 6 orbitals, 12 electrons (2) 5 orbitals, 10 electrons  
(3) 7 orbitals, 14 electrons (4) 4 orbitals, 8 electrons

Ans : 3

145. An iron ball has a mass of 35gms and a speed of  $50m/s$ . If the speed can be measured with in accuracy of 2% then the uncertainty in the position

- (1)  $1.507 \times 10^{-34}m$  (2)  $1.507 \times 10^{-31}m$  (3)  $1.507 \times 10^{-33}m$  (4)  $1.507 \times 10^{-12}m$

Ans : 3

146. In the periodic table an element with atomic number 56 belongs to

- (1) IIIA group, 6<sup>th</sup> period (2) IVA group, 5<sup>th</sup> period  
(3) IIA group, 6<sup>th</sup> period (4) IVA group, 6<sup>th</sup> period

Ans : 3

147. The first ionization potential of four consecutive elements present in the second period of the periodic table are 8.3, 11.3, 14.5 and 13.6ev respectively. Which one of the following is the first ionization potential of carbon

- (1) 13.6 (2) 11.3 (3) 8.3 (4) 14.5

Ans : 2

148. CuCl has more covalent character than NaCl because

- (1)  $Na^+$  has more polarizing power than  $Cu^+$   
(2)  $Cu^+$  has more polarizing power than  $Na^+$   
(3)  $Cl^-$  has pseudo inert gas electron configuration



(4)  $Na^+$  has pseudo inert gas electron configuration

Ans : 2

149. The bond orders in the pairs of bonded oxygen atoms in ozone molecule are

- (1) (1,2)                      (2)  $\left(\frac{1}{2}, 1\frac{1}{2}\right)$                       (3)  $\left(1\frac{1}{2}, 1\frac{1}{2}\right)$                       (4)  $\left(\frac{1}{2}, 2\frac{1}{2}\right)$

Ans : 3

150. The ratio of kinetic energies of 1g of  $H_2$  and 2g of  $CH_4$  at the same temperature will be

- (1) 1 : 4                      (2) 4 : 1                      (3) 1 : 2                      (4) 2 : 1

Ans : 2

151. At critical temperature surface tension of a liquid is

- (1) Zero                      (2) Infinite                      (3) Varies liquid to liquid                      (4) Cannot be measured

Ans : 1

152. 250ml of  $Na_2CO_3$  solution contains 2.65g of  $Na_2CO_3$ . 10ml of this solution is mixed with 'X' ml of water to obtain 0.001M  $Na_2CO_3$  solution. The value of 'X' is

- (1) 1000                      (2) 990                      (3) 9990                      (4) 90

Ans : 2

153. Match the following

List – I

A)  $Na_2O_2$

B)  $RbO_2$

C)  $OF_2$

D)  $O_2F_2$

List – II

I) Zero

II) + 1

III) – 1

IV)  $-\frac{1}{2}$

V) + 2

A B C D

(1) I II III IV

(3) III IV V II

A B C D

(2) II IV III V

(4) I IV IV II

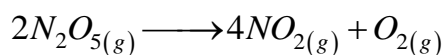
Ans : 3

154. Which one of the following is correct for a spontaneous reaction at any temperature ?

- (1)  $\Delta H = -ve, \Delta S = +ve, \Delta G = -ve$                       (2)  $\Delta H = -ve, \Delta S = -ve, \Delta G = -ve$   
 (3)  $\Delta H = +ve, \Delta S = +ve, \Delta G = -ve$                       (4)  $\Delta H = -ve, \Delta S = +ve, \Delta G = +ve$

Ans : 1

155. What is the ratio between the rate of decomposition of  $N_2O_5$  to rate of formation of  $NO_2$  ?



- (1) 1 : 4                      (2) 4 : 1                      (3) 2 : 1                      (4) 1 : 2

Ans : 4

156. Which one of the following statement is correct ?

- (1) The pH of  $10^{-8} M$  HCl is 8.0  
(2) Bronsted – Lowry theory could not explain the acidic nature of  $BCl_3$   
(3) The pH of 0.01M NaOH solution is 2.0  
(4) The  $K_w$  of pure water at 308K is  $1.0 \times 10^{-14} \text{ mole}^2 / \text{lit}^2$

Ans : 2

157.  $AlH_3$  is an example for

- (1) Interstitial hydride                      (2) Electron rich hydride  
(3) Ionic hydride                              (4) Electron deficient hydride

Ans : 4

158. Which one of the following is paramagnetic ?

- (1)  $Na_2O$                       (2)  $Na_2O_2$                       (3)  $KO_2$                       (4)  $K_2O_2$

Ans : 3

159. Which group P – block elements show highest positive oxidation state ?

- (1) 16                      (2) 17                      (3) 18                      (4) 15

Ans : 3

160. Even though carbon and silicon are non metals, they have higher melting points than others because

- (1) They exist as covalent solids in 3D networks  
(2) The bonds in their molecules are strong  
(3) They exhibit multiple bonding  
(4) They are highly electronegative

Ans : 1