IMPORTANT INSTRUCTIONS :

❖ **Pattern of the Entrance Examination**:-

Paper containing 180 objective type questions ,from Biology, Physics and Chemistry

❖ **Use Blue/Black Ball Point Pen only** to darken the appropriate circle. Answers marked with pencil would not be evaluated.

❖ Each item carries **4marks**. For each correct response the candidate will get 4 marks. For each incorrect response **1mark** will be deducted from the total score

1. Identify correct match from Column I, II and III for gene interaction.

	Column I	Column II	Column III
(1)	Complementary gene 9:6:1	Dominant epistasis 13:3	Recessive epistasis 9:3:4
(2)	Dominant epistasis 12:3:1	Complementary gene 9:7	Duplicate gene 15:1
(3)	Dominant epistasis 12:3:1	Collaborative gene 9:3:3:1	Duplicate gene 9:6:1
(4)	Recessive epistasis 9:3:4	Dominant epistasis 12:3:1	Incomplete dominance 2:1

2. Find the correct match for name of the alga, it's class and reserve food :

(1)	_Sargassum_	Rhodophyceae	Floridean starch
(2)	_Chara_	Chlorophyceae	Glycogen
(3)	_Porphyra_	Chlorophyceae	Glycogen
(4)	_Polysiphonia_	Rhodophyceae	Floridean starch

3. Name the method which can be adopted to remove over 99% of the particulate matter present in the exhaust from a thermal power plant
   (1) Scrubber
   (2) Catalytic converter
   (3) Bag filter
   (4) Electrostatic precipitator

4. The cervical caps and Diaphragms are
   (1) For easy conception
   (2) Protect the user from STI and AIDS, but nor from Conception
   (3) Block the entry of sperm through the cervix
   (4) Cant be reused and need to be disposed every time.

5. Find the correct statement.
   (1) Most common method of genetic recombination in bacteria is by fission
   (2) Chief producers in ocean have indestructible cell wall
   (3) Slime moulds form plasmodium during unfavourable conditions
   (4) Sleeping sickness is caused by a ciliated protozoan

6. The stages of DNA Fingerprinting are given below
   (i) Digestion of DNA by restriction endonucleases
   (ii) Hybridization using a labelled VNTR probe
   (iii) Separation of DNA fragments by Gel Electrophoresis
   (iv) Detection of hybridized DNA fragments by Autoradiography
   Arrange them as per the protocol
   (1) i – ii – iii – iv
   (2) iii – ii – i – iv
   (3) iii – i – ii – iv
   (4) i – iii – ii – iv

7. Precocious reproductive development late in the growing season is prevented in
   (1) Winter variety of wheat
   (2) Spring variety of barley
   (3) All monocarpic plants
   (4) Both (1) and (2)

8. Statement (1): Breast feeding in the initial period of infant growth is recommended by Doctors
   Statement (2): Colostrum contain several antibodies absolutely essential to develop resistance for new born baby
   (1) Statement (1) and statement (2) are correct.
   (2) Statement (1) is only correct
   (3) Statement (2) is only correct
   (4) Statement (1) and statement (2) are incorrect

9. Find the incorrect match.
   (1) *Dianthus* – Free central placentation
   (2) *Cassia* – Imbricate aestivation of corolla

   (3) Mulaithi – Medicinal plant of Fabaceae
   (4) China rose – Polyadelphous stamens

10. The following are few statements regarding 'animal husbandry'
    A. Milk yield is primarily dependent on the quality of breed with high yielding potential combined with resistance to disease.
    B. Poutry refers to rearing of any avian species that has its potential for meat, egg, other parts directly or indirectly entering the food chain.
    C. 'Inbreeding' increases the homozygosity and is necessary to evolve a pure line
    D. The term 'out breeding' refers only to the mating between different breeds.
    How many of the above statements are correct.
    (1) 1
    (2) 2
    (3) 3
    (4) 4

11. Read the following statements.
    (A) For monohybrid cross for flower colour in snapdragon in F_2 both phenotypic as well as genotypic ratio is 1 : 2 : 1
    (B) For test cross of flower colour in garden pea phenotypic ratio is always 1 : 1
    (1) Both statement (A) and (B) are correct
    (2) Statement (A) is correct but (B) is incorrect
    (3) Both statement (A) and (B) are incorrect
    (4) Statement (A) is incorrect but (B) is correct

12. Find the incorrect match.

   (1) Active repressor + inducer = inactive repressor

   (2) Apoenzyme + Co-factor = Holoenzyme

   (3) DNA + Histone = Nucleosome

   (4) Synergids + Central cell = Egg apparatus

13. What is incorrect for metaphase

   (1) Golgi complex and endoplasmic reticulum disappear

   (2) Spindle fibres attach to kinetochores of chromosomes

   (3) Chromosomes are moved to spindle equator and get aligned along metaphase plate through spindle fibres to both poles

   (4) Best stage to study chromosome morphology

14. The clitoris is a tiny finger like structure which lies at the upper junction of the two labia minora above the urethral orifice, It is found to be

   (1) Analogous to male pens

   (2) Homologous to male Bulbourethal gland

   (3) Analogous to male prostrate gland

   (4) Homologous to male penis

15. Identify the animal given below, which doesn't have a specific measurable degree of self-consciousness or self-awareness?

   (1) Orangutan

   (2) Pheronematidae

   (3) Elephant

   (4) Bottlenose Dolphin

16. Match the following organism with their respective characteristics

   a) *Saccoglossus*   i) Nephridium

   b) *Nereis*   ii) Kidney

   c) *Fasciola*   iii) Proboscis Gland

   d) *Corvus*   iv) Flame cell

   Select the correct option from the following

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

17. Among the below mentioned varieties

   (a) Atlas 66   (b) Jaya

   (c) TN – 1   (d) Prabhani Kranti

   (e) Pusa komal   (f) Himgiri

   (g) Pusa gaurav   (h) Sonalika

   Varieties of wheat are :

   (1) (b), (f), (h)

   (2) (a), (c), (e)

   (3) (c), (f), (g)

   (4) (a), (f), (h)

18. The part of the hind brain which integrates information received from the semicircular canals of the ear and the auditory system is

   (1) Olfactory lobe

   (2) Cerebellum

   (3) Occipital lobe

   (4) Crura cerebri

19. *Bacillus thuringenesis* is :

   (1) Source of many restriction endonuclease enzymes

   (2) Used as a vector for gene transfer

   (3) Source of biopesticide

   (4) Transgenic bacteria used for bioremediation

20. A narrow tubular finger like projection, the Vermiform appendix which is a vestigial organ, arises from
   (1) Ilium
   (2) Ileum
   (3) Caecum
   (4) Colon

21. Choose the correct statements :
   (a) Atmospheric input of phosphorous through rainfall is much smaller than carbon
   (b) Gaseous exchange of phosphorous between organism and environment are negligible
   (c) Herbivores and other animals obtain phosphorous through food
   (d) A considerable amount of carbon returns to the atmosphere through burning of fossil fuel
   (1) (a), (b) and (c)
   (2) (a), (c) and (d)
   (3) (b), (c) and (d)
   (4) Only (a) and (b)

22. Hybrid Maize released in the year 2000 was rich in :
   (1) Iron and Zinc
   (2) Tyrosin and Tryptophan
   (3) Lysin and Tryptophan
   (4) Lysin and Argenine

23. Which of the following pair are modification of same structure ?
   (1) Spine of cactus and thorn of *Citrus*
   (2) Thorn of *Bougainvillea* and tendrils of cucumber
   (3) Phylloclade of *Euphorbia* and phyllode of Australian acacia
   (4) Tendrils of pea and tendrils of watermelon

24. Recent illegal introduction of which fish for aquaculture practices is posing a threat to the indigenous catfishes in our rivers
   (1) *Clarias gariepinus*
   (2) *Clavarius major*
   (3) *Clarias batrachus*
   (4) *Claviceps purpurea*

25. A genetic disorder in which a sterile individual has overall masculine development with Gynacomastia is
   (1) Down syndrome
   (2) Patau syndrome
   (3) Klinefelter syndrome
   (4) Turner syndrome

26. Among the following, the important phytotoxic pollutants are
   (1) CO and CO_2
   (2) CO_2 and O_3
   (3) CO and O_2
   (4) SO_2 and NO_2

27. Find the incorrect match.

(1)	Pleiotropy	-	Dominance is not an autonomous feature of gene or gene product
(2)	Polygenic character	-	Different genotypes may give same phenotype based on total number of dominant alleles
(3)	Incomplete dominance	-	The contrasting alleles blend to produce intermediate phenotype
(4)	Multiple allelism	-	Same segment of DNA can undergo mutation more than once resulting in many different forms

28. The Ozone Hole over Antarctica develops every year between _____ and _____ respectively
    (1) Late August, Early October
    (2) Late April, Early June
    (3) Early May, Late June
    (4) Early October, Late December

29.
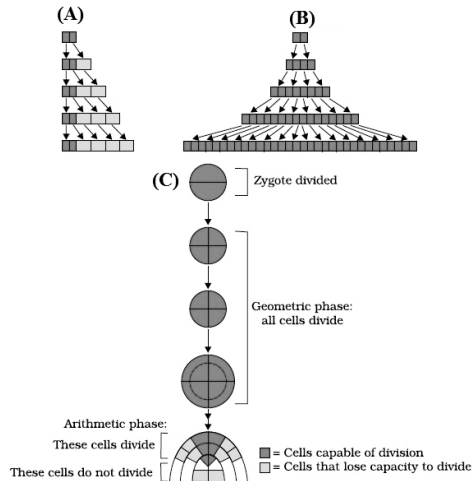
In the given diagram – select correct :
    (1) (A) = Geometric growth
    (2) (B) = Arithmetic growth
    (3) (A) = Lt = Lo + rt
    (4) (B) = Growth at constant rate

30. Which of the following sexually transmittable disease is caused by Bacteria?
    (1) Genital Herpes
    (2) Genital Warts
    (3) Candidiasis
    (4) Gonorrhea

31. Which of the following is not an out come of redifferentiation ?
    (1) Formation of plant from callus where leaf was the explants
    (2) Formation of cork
    (3) Formation of ground tissue from embryo development
    (4) Formation of secondary vascular tissue

32. When readymade antibodies are directly injected to an individual to protect the body against foreign agents is called
    (1) Natural passive immunity
    (2) Artificial Passive Immunity
    (3) Natural Active Immunity
    (4) Artificial Active Immunity

33. Auxin and Cytokinins show opposite effect for
    (1) Flowering
    (2) Cell division
    (3) Senescence
    (4) Apical dominance

34. The osmotic concentration of the glomerular filtrate is greatest at the 'U' shaped loop of Henle. Here the filtrate concentration is about _____ $mOsml^{-1}$
    (1) 400
    (2) 800
    (3) 1200
    (4) 200

35. What is incorrect for cell membrane ?
    (1) Quasi fluid nature of lipid enables lateral movement of proteins
    (2) Carbohydrates are present on both surface of membrane forming glycolipids and glycoproteins
    (3) Apart from phospholipids membrane has one more lipid as cholesterol
    (4) It's fluid nature enables cell growth cell division and secretion

36. Incorrect match for feature associated to property of genetic code is :

(1)	Universal	-	Production of recombinant protein in heterologus host
(2)	Degenerate	-	Modified allele codes for the same enzyme so modified allele is equivalent to unmodified allele
(3)	Contiguous	-	Single nucleotide deletion causes frame shift mutation
(4)	Unambiguous	-	If sequence of amino acids in polyptide is known then sequence of nucleotides in mRNA can be predicted

37. The phenomenon '*Ontogeny repeats Phylogeny*' is explained by
    (1) Recapitulation theory
    (2) Inheritance theory
    (3) Natural selection theory
    (4) Mutation theory

38. Read the following statements carefully
    A. When someone drinks lots of water, ADH release is decreased.
    B. Exposure to cold weather, suppresses ADH release
    C. Eating Potassium rich food can cause 'diuresis' and decrease Sodium levels, thereby reducing fluid retention
    D. ADH is a powerful 'Vasodilator'

    Among the above the INCORRECT statement are

    (1) A and C
    (2) B and D
    (3) A, B and D
    (4) Only D

39. Decision regarding the validity of GM research is taken by
    (1) GEAC
    (2) IARI
    (3) DBT
    (4) CCMB

40. When we take the food into the mouth, the following event need not be mandate
    (1) Flexion of Hand
    (2) Contraction of Biceps
    (3) Relaxation of Triceps
    (4) Contraction of Quadriceps

41. Read the statements given here.
    [A] Recombinant colonies do not produce any colour in presence of chromogenic substance
    [B] Colour is not produced in recombinant colonies due to insertional inactivation of tet^R gene
    (1) Both statement [A] and [B] are correct
    (2) Statement [A] is correct but [B] is incorrect
    (3) Statement [A] is incorrect but [B] is correct
    (4) Both statement [A] and [B] are incorrect

42. File like rasping organ for feeding in *'Pila'* is called
    (1) Mantle
    (2) Parapodia
    (3) Radula
    (4) Ctenidia

43. Select the group of archegoniates :
    (1) *Fucus, Marchantia, Cycas*
    (2) *Sphagnum, Pinus, Solanum*
    (3) *Funaria, Equisetum, Ginkgo*
    (4) *Lycopodium, Cycas, Sesbania*

44. Which of the following is the most important cause for animals and plants being driven to extinction
    (1) Habitat loss and Fragmentation
    (2) Introduction of Alien Species
    (3) Over exploitation by Humans
    (4) Floods and Drought

45. Which of the following statements about the particular entity is true ?
    (1) Centromere is found in animal cells, which produces pindle apparatus during cell division
    (2) Few chromosomes have dark staining secondary constriction
    (3) Histone core of nucleosome consists of five types of histones
    (4) Acrocentric chromosome has one extremely short and one very long arm

46. Which can not be explained by Charles Darwin
    (1) Survival of Fittest
    (2) Arrival of the fittest
    (3) Natural Selection
    (4) Struggle for existence

47. Z-scheme in chloroplast
    (1) Involves both PS I and PS II
    (2) Involves water splitting at PS I
    (3) Shows downhill movement of electrons from PS I to PS II
    (4) Both (1) and (3)

48. The inner ear contains a complex system located above the Cochlea called ___(A)____. It is influenced by gravity and movements, help us in ___(B)___.
    (1) A – Organ of Corti, B – Hearing
    (2) A – Organ of Corti, B – Maintenance of Posture
    (3) A – Vestibular apparatus, B – Maintenance of Posture
    (4) A – Macula, B – Hearing

49. Infection agents that multiply but do not show cellular organization
    (1) Virus and bacteria
    (2) Virus and prion
    (3) Bacteria and fungi
    (4) Fungi and viroids

50. Barr Body is absent in
    (1) Female with Philadelphia chromosome
    (2) Female with Down Syndrome
    (3) Male with Patau syndrome
    (4) Male with Klinefelter syndrome

51. Match column I with column II

Column-I	Column-II
(a) Maize	i) Perisperm in seed
(b) Orchids	ii) Non endospermous seed
(c) Citrus	iii) Polyembryony
(d) Castor	iv) Scutellum represents cotyledon

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

52. In Menstrual cycle there are two surges in Estrogen concentration of blood. The first and the major surge is recorded during
    (1) Mid Luteal Phase
    (2) Late Luteal phase
    (3) Early Follicular Phase
    (4) Late Menstruation Phase

53. Filiform apparatus is important for :
    (1) Growth of pollen tube in style
    (2) Pollen germination on stigma
    (3) Entry of pollen tube in embryosac
    (4) Development of PEC into endosperm

54. Acid precipitation refers to rain, snow, fog with a lower P^H. This results primarily due to the presence of which of the following components in the atmosphere
    (1) Co and CO_2
    (2) SO_2 and NO_2
    (3) Hydrocarbons and O_3
    (4) Lead and Phosphorous Oxide

55. ___a___ is a homothallic plant while ___b___ is a heterothallic plant. a and b are respectively
    (1) *Chara* and *Marchantia*
    (2) *Marchcantia* and *Chara*
    (3) *Cucurbita* and Coconut
    (4) *Papaya* and Coconut

56. The contraceptive method with almost NO side effects is
    (1) Periodic abstinence
    (2) Hormonal Implants
    (3) Intra Uterine Devices
    (4) Oral Pills

57. Mendelian dihybrid cross shows which of the following feature that is similar to monohybrid cross ?

    (1) F_1 progeny is similar to only one of the two parents
    (2) In F_2 only parental phenotype is seen
    (3) In F_2 both parental and new phenotypes are seen
    (4) More than one options are correct

58. A 25 year old female goes to a doctor and told that after 4 days, there is a due date of her menses and she want to postpone the menstruation for some days, as she will be engaged in some official work during these days. Which hormone will the doctor advise her to take.
    (1) FSH
    (2) LH
    (3) Combination of FSH and LH
    (4) Progesteron

59. Read the statements [A] and [B]
    [A] In *Drosophila* body colour and eye colour are controlled by same gene.
    [B] In garden pea seed shape and starch grain size in seed are controlled by genes that are closely present in same chromosome.
    (1) Both statement [A] and [B] are correct
    (2) Only [A] is correct
    (3) Only [B] is correct
    (4) Both statement [A] and [B] are incorrect

60. Failure of Insulin production leads to
    (1) Addisson's disease
    (2) Cushing's Syndrome
    (3) Diabetes mellitus
    (4) Diabetes insipidus

61. In a double stranded DNA the ratio between purines and pyrimidines is 1 : 1. This was for the first time observed by
    (1) Mauris Wilkins and Rosalind Franklin
    (2) Meselson and Stahl
    (3) Erwin Chargaff
    (4) James Watson and Francis Crick

62. Brunner's glands and Crypts of Lieberkühn are the associated glands of
    (1) Duodenum and Ileum respectively
    (2) Both are confined to small intestine
    (3) Contributes the 'succus entericus'
    (4) All the above

63. In bacteria the structural genes generally have more than one
    (1) Cistrons
    (2) Introns
    (3) Promoter
    (4) All of these

64. Match the following

    Column – I   Column – II
    (i) ADH   a. Pituitary
    (ii) ACTH   b. Mineral Corticoid
    (iii) Aldosterone   c. Diabetes mellitus
    (iv) Insulin   d. Diabetes insipidus
    (v) Adrenalin   e. Vasodilator

    Select the correct combination
    (1) i – a, ii – d, iii – b, iv – c, v – e.
    (2) i – d, ii – b, iii – a, iv – c, v – e.
    (3) i – d, ii – a, iii – c, iv – b, v – e.
    (4) i – d, ii – a, iii – b, iv – c, v – e.

65. Explants are
    (1) Exceptional plants like pomato produced through tissue culture
    (2) Somaclonal varients produced during tissue culture
    (3) Any part of plant that is taken out to grow In tissue culture
    (4) Tailor made experimental plants

66. What is 'brown sugar'
    (1) Theophyline
    (2) Levozepam
    (3) Methodrine
    (4) Diacetyl morphine

67. Alexander Fleming accidentally discovered penicillin while working on
    (1) *Staphylococcus*
    (2) *Streptococcus*
    (3) *Penicillium*
    (4) *Streptomyces*

68. In the process of sewage treatment the biogas producing bacteria :
    (1) Reduce the BOD of sewage water
    (2) Form major part of activated sludge
    (3) Digest bacteria and fungi in the sludge
    (4) Require continuous supply of oxygen

69. Which of the following can not be cut by a restriction endonuclease enzyme ?
    (1) GATATC
        CTATAG
    (2) GTAATG
        CATTAC
    (3) GAATTC
        CTTAAG
    (4) GGATCC
        CCTAGG

70. Cavity of vitreous humour in the eye is situated
    (1) Behind the lens
    (2) Infront of the lens
    (3) Behind the retina
    (4) Between the retina and sclera

71. Ecological pyramid which is never inverted is
    (1) Pyramid of biomass
    (2) Pyramid of number
    (3) Pyramid of energy
    (4) Pyramid of size

72. Ozone Hole means
    (1) Hole in the Ozone layer in Stratosphere
    (2) Decrease in the thickness in the Ozone at the Statosphere
    (3) Decrease in the concentration of Ozone in the Troposphere
    (4) Increase in the concentration of Ozone in the Troposphere

73. In recombinant DNA technology, expression of foreign gene takes place during
    (1) Culturing
    (2) Downstream processing
    (3) PCR
    (4) Selection of recombinant

74. Doctors use Stethoscope to hear the heart sound produced during each cardiac cycle. The second sound is heard, when
    (1) AV Node receives signals from SA Node
    (2) AV Valves open up
    (3) Ventricular valves vibrate due to guishing of blood from atria
    (4) Semilunar valves close down after the blood flows into vessels from ventricles

75. RNAi refers to
    (1) Gene silencing
    (2) Gene cloning
    (3) Reverse transcription
    (4) Dominance of RNA-world

76. Earthworms have no skeleton, but during burrowing the anterior end becomes turgid and acts as a hydraulic skeleton. It is due to
    (1) Gut Peristalsis
    (2) Setae/Chaetae
    (3) Coelomic fluid
    (4) Hemolymph

77. Evolutionary relationship between organisms is taken into account in
    (1) Cytotaxonomy
    (2) Natural classification system
    (3) Systematics
    (4) Numerical taxonomy

78. The largest quantity of air that can be expired after a maximum inspiratory effort is called
    (1) Vital capacity
    (2) Total lung capacity
    (3) Inspiratory Capacity
    (4) Functional Residual Capacity

79. The two functional groups characteristic of sugars are :
    (1) Carbonyl and Gydroxyl
    (2) Hydroxil and methyl
    (3) Carbonyl and phosphate
    (4) Carbonyl and methyl

80. Where will you look for the Sporozoite
    (1) Saliva of infected female *Anopheles*
    (2) RBC of human suffering from malaria
    (3) Spleen of infected humans
    (4) Salivary glands of freshly moulted female *Anopheles*

81. What is incorrect for pollen grains ?

    (1) Remain viable for many years due to presence of sporopollenin in exine

    (2) Are stored in liquid nitrogen at $-196^{\circ}C$ for use in plant breeding programme

    (3) Represent male gametophyte of angiosperms

    (4) Pollen grains of carrot grass are allergic

82. Find the incorrect match.

(1)	Sulphur	-	Carbohydrate translocation
(2)	Chlorine	-	Water splitting reaction in photosynthesis
(3)	Phosphorus	-	Constituent of cell membrane
(4)	Copper	-	Associated with redox reaction enzymes

83. Colleterial gland in cockroach are present in

    (1) Only male cockroach

    (2) Female cockroach only

    (3) Both male and female cockroach

    (4) In Female cockroach only during breeding season

84. Improved race of pigeon developed due to

    (1) Environmental selection

    (2) Natural selection

    (3) Artificial selection

    (4) Protective selection

85. In dicot plant vascular cambium of root differs from vascular cambium of stem in

    (1) Types of cells it produces

    (2) Origin

    (3) Function

    (4) All of these

86. In genetic engineering, a DNA segment (gene) of interest, is transferred to the host cell through a vector. Consider the following four agents (A – D). In this regard, select the correct option about which one or more of these can be used as a vector(s).

    A. Bacterium   B. Plasmid

    C. *Plasmodium*   D. Bacteriophage

    The correct option is

    (1) Only A

    (2) A and C only

    (3) Only B and D

    (4) All except C

87. Select the wrong statement

    (1) Puffballs belong to basidiomycetes

    (2) Archaebacteria survive in extreme conditions due to their cell wall structure

    (3) Common nitrifying bacteria in soil are *Nitrosomonas* and *Rhodospirillum*

    (4) Pteridophytes and Gymnosperms show different life cycle patterns

88. Read the two statements.

    [A] Recombinase activity is followed by synaptonemal complex formation in meiosis I

    [B] Polytene chromosomes represent diplotene chromosomes of oocytes of *Salamender*

    (1) Both statement [A] and [B] are correct

    (2) Both statement [A] and [B] are incorrect

    (3) Only [A] is correct

    (4) Only [B] is correct

89. Damage of thymus in a child leads to

    (1) Reduction in the haemoglobin content of the blood

    (2) Reduction in stem cells production

    (3) A loss of antibody mediated immunity

    (4) A fall in the cell mediated immunity

90. A male frog has

    (1) 4 fingers in hand and 5 toes in feet

    (2) 5 fingers in hand and 5 toes in feet

    (3) 4 fingers in hand and 4 toes in feet

    (4) 5 fingers in hand and 4 toes in feet

91. Which of the following statements are true during the propagation of a plane progressive mechanical wave.
    I) All the particles are vibrating in the same phase.
    II) Amplitudes of all the particles are equal.
    III) Particles of medium executes S.H.M.
    IV) Wave velocity depends upon the nature of the medium.

    (1) I & II are only true

    (2) III & IV are only true

    (3) II, III & IV are only true

    (4) All are true

92. A beam of light from a source L is incident normally on a plane mirror fixed at a certain distance x from the source. The beam is reflected back as a spot on a scale placed just above the source L. When the mirror is rotated throught a small angle θ, the spot of the light is found to move through a distance y on the scale. The angle θ is given by

    (1) $\dfrac{y}{x}$

    (2) $\dfrac{x}{2y}$

    (3) $\dfrac{x}{y}$

    (4) $\dfrac{y}{2x}$

93. A stone tied to the end of a string of 1 m long is whirled in a horizontal circle with a constant speed. If the stone makes 22 revolutions in 44s, what is the magnitude and direction of acceleration of the stone?

    (1) $\dfrac{\pi^2}{4}$ ms^{-2} and direction along the radius towards the centre

    (2) π^2 ms^{-2} and direction along the radius away from centre

    (3) π^2 ms^{-2} and direction along the radius towards the centre

    (4) π^2 ms^{-2} and direction along the tangent to the circle

94. Two identical glass $\left(\mu_g = 3/2\right)$ equiconvex lenses of focal length f each are kept in contact. The space between the two lenses is filled with water $\left(\mu_w = 4/3\right)$. The focal length of the combination is

    (1) f/3

    (2) f

    (3) 4f/3

    (4) 3f/4

95. If an air bubble rises from the bottom of a mercury tank to the top, its volume becomes $1\dfrac{1}{2}$ times. When normal pressure is 76cm of Hg then the depth of the Hg tank is

    (1) 38 cm

    (2) 132 cm

    (3) 76 cm

    (4) 49 cm

96. The angle of a prism is A. One of its refracting surfaces is silvered. Light rays falling at an angle of incidence 2A on the first surface returns back through the same path after suffering reflection at the silvered surface. The refractive index μ, of the prism is

(1) 2sinA

(2) 2cosA

(3) $\frac{1}{2} \cos A$

(4) tanA

97. A pond has an ice layer of thickness 3 cm. If K (K is coefficient of thermal conductivity) of ice is 0.005 CGS units, surface temperature of surroundings is $- 20^0$ C, density of ice is 0.9 gm/cc, the time taken for the thickness to increase by 1 cm is

(1) 30 min

(2) 35 min

(3) 42 min

(4) 60 min

98. A particle of mass 5 units is moving with a uniform speed $V = 3\sqrt{2}$ units in the XOY plane along the line Y = X + 4. The magnitude of the angular momentum of the particle about the origin is

(1) 60 units

(2) $40\sqrt{2}$ units

(3) zero

(4) 7.5 units

99. Two beams of light having intensities I and 4I interfer to produce a fringe pattern on a screen. The phase difference between the beam is $\frac{\pi}{2}$ at point A and 2π at point B. Then find out the difference between the resultant intensities at A and B.

(1) 2I

(2) 5I

(3) I

(4) 4I

100. Two stars are at a distance of 10 light years from earth. They are observed by a telescope. The diameter of the objective is 0.2m. The minimum distance between the stars when they will be just resolved is - [$\lambda = 5.5 \times 10^{-7}$m and one light year = 10^{16} m approximately]

(1) 3×10^{10} m

(2) 3×10^{11} m

(3) 3.35×10^{10} m

(4) 3.35×10^{11} m

101. The variation of potential with distance R from a fixed point is as shown below. The electric field at R = 5m is
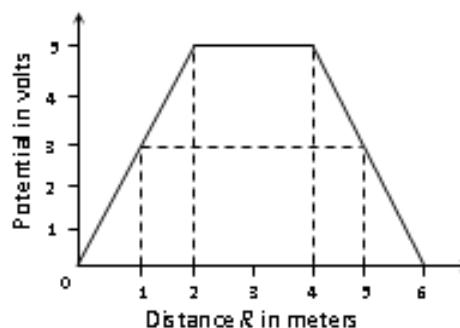
(1) 2.5 $volt/m$

(2) -2.5 $volt/m$

(3) $2/5$ $volt/m$

(4) $-2/5$ $volt/m$

102. A capacitor of capacitance C is charged to a potential difference V from a cell and then disconnected from it. A charge $+Q$ is now given to its positive plate. The potential difference across the capacitor is now

(1) V

(2) $V + \dfrac{Q}{C}$

(3) $V + \dfrac{Q}{2C}$

(4) $V - \dfrac{Q}{2C}$

103. A potentiometer circuit has been set up for finding the internal resistance of a given cell. The main battery, used across the potentiometer wire, has an emf of 2.0 V and a negligible internal resistance. The potentiometer wire itself is 4m long. When the resistance R, connected across the given cell, has values of

i) Infinity   ii) 9.5 Ω

the balancing lengths on the potentiometer wire are found to be 3 m and 2.85m, respectively. The value of internal resistance of the cell is

(1) 0.25 Ω

(2) 0.95 Ω

(3) 0.5 Ω

(4) 0.75 Ω

104. What horizontal force on block A prevents the smaller block B from falling down? Block A has a mass 10 kg and is on a smooth horizontal surface. Block B has a mass of 1 kg and the coefficient of friction between A and B is 0.55 (take acceleration due to gravity as 10 m/s^2)
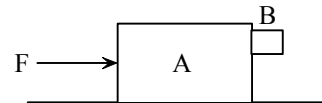
(1) 20 N

(2) 200 N

(3) 100 N

(4) 80 N

105. An electron accelerated through a potential difference V passes through a uniform transverse magnetic field and experiences a force F. If the accelerating potential is increased to 2V, the electron in the same magnetic field will experience a force

(1) F

(2) $F/2$

(3) $\sqrt{2}\,F$

(4) 2F

106. When a galvanometer is shunted with a 6Ω resistance, the deflection is reduced to one-third. If the galvanometer is further shunted with a resistance of 3Ω, the deflection is reduced to

(1) one-sixth

(2) one-fifth

(3) one-seventh

(4) two-third

107. An electron is orbiting in a circle of radius 'r', magnetic moment due to electron is proportional to

    (1) $\sqrt{r}$

    (2) r

    (3) r^2

    (4) independent of r

108. The adjacent graph shows the extension (Δl) of a wire of length 1m suspended from the top of a roof at one and with a load W connected to the other end. If the cross-sectional area of the wire is $10^{-6}m^2$, the Young's modulus of the material of the wire is
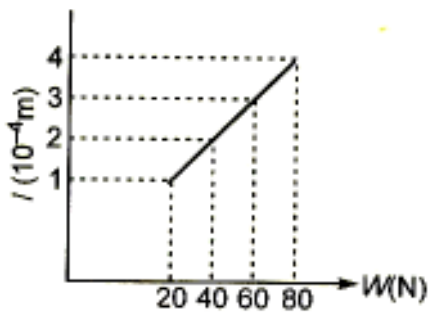
    (1) $2 \times 10^{11} Nm^{-2}$

    (2) $4 \times 10^{12} Nm^{-2}$

    (3) $3 \times 10^{11} Nm^{-2}$

    (4) $5 \times 10^{12} Nm^{-2}$

109. The network shown in figure is a part of a complete circuit. If at a certain instant, the current i is 4 A and is increasing at a rate of $10^3 AS^{-1}$. Then $(V_B - V_A)$ will be
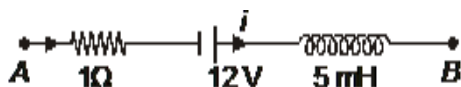
    (1) 5 V

    (2) 3 V

    (3) -6 V

    (4) -3 V

110. The amplitude of electric field at a distance r from a source of power P is (taking 100% efficiency)

    (1) $\sqrt{\dfrac{P}{2\pi r^2 c\varepsilon_0}}$

    (2) $\sqrt{\dfrac{P}{4\pi r^2 c\varepsilon_0}}$

    (3) $\sqrt{\dfrac{P}{8\pi r^2 c\varepsilon_0}}$

    (4) $\dfrac{P}{2\pi r^2 c\varepsilon_0}$

111. The given graph represents V-I characteristics for a semiconductor device. Which of the following is correct
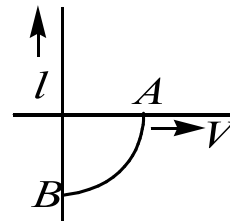
    (1) It is V-I characteristics of solar cell, whose point A represent open circuit voltage and B shot circuit current

    (2) It is of solar cell and points A and B represent open circuit voltage and current respectively

    (3) It is for a photodiode and points A & B represent open circuit voltage and current respectively

    (4) It is for LED, points A & B represent open circuit voltage and short circuit current respectively

112. Four identical thin rods each of mass M and length L, form a square frame. Moment of inertia of this frame about an axis through the centre of the square and perpendicular to its plane is

(1) $\dfrac{4}{3}ML^2$

(2) $\dfrac{2}{3}ML^2$

(3) $\dfrac{13}{3}ML^2$

(4) $\dfrac{1}{3}ML^2$

113. P-V diagram of a diatomic gas is a straight line passing through origin. The molar heat capacity of the gas in the process will be
(1) 4R
(2) 2.5R
(3) 3R
(4) 4R/3

114. A shell of mass 6 kg after explosion breaks up into three fragments of equal masses. Two of the pieces fly off with equal speeds each of 12 m/s at an angle of 120°. Then the linear momentum of the third fragment in kg m/s will be
(1) 12
(2) 24
(3) 48
(4) 36

115. A necklace weight 50gm in air and 47gm in water. Assume copper is mixed with gold to prepare the necklace. The mass of copper present in it is (specific gravity of gold = 20 and specific gravity of copper = 10)
(1) 15 gm
(2) 10 gm
(3) 8 gm
(4) 30 gm

116. In the circuit shown in fig. the current gain, $\beta = 100$ for the transistor. What would be the bias resistance R_B so that $V_{CE} = 5V$? (Neglect V_{BE})
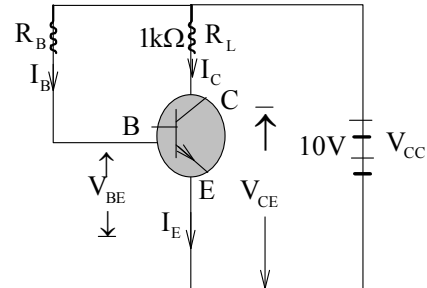
(1) $2 \times 10^3 \Omega$

(2) $2 \times 10^5 \Omega$

(3) $1 \times 10^6 \Omega$

(4) 500Ω

117. The angular momentum of an electron in hydrogen atom is $\dfrac{3h}{2\pi}$. Here h is the Plank's constant. The kinetic energy of this electron is
(1) 4.53 eV
(2) 1.51 eV
(3) 3.4 eV
(4) 6.8 eV

118. If V_1 and V_2 are the maximum velocities of photoelectron emitted when light of wavelength λ_1 and λ_2 respectively incident on a metallic surface, and if $\lambda_1 = 3\lambda_2$, then

(1) $V_2 < \sqrt{3}V_1$

(2) $V_1 < \sqrt{3}V_2$

(3) $V_2 > \sqrt{3}V_1$

(4) $V_1 > \sqrt{7}V_2$

119. How much energy must a gamma ray photon have, if it is to materialize into a pair of electron and positron with each particle having a K.E. of 1 MeV ?

(1) 2MeV

(2) 3.02 MeV

(3) 1.0MeV

(4) 0.51 MeV

120. A particle of mass m is moving in a circular path of constant radius r such that its centripetal acceleration a_c is varying with time t as $a_c = k^2rt^2$ where k is a constant. The power delivered to the particle by the forces acting on it, is

(1) zero

(2) $mk^2r^2t^2$

(3) mk^2r^2t

(4) mk^2rt

121. The period of oscillation of spring pendulum is given by $T = 2\pi\sqrt{\dfrac{m}{k}}$ where m is 100 gm and is know to have 0.1 gm accuracy. The time period is 2sec. The time of 100 oscillations is measured by a stop watch of least count 0.1 s. The percentage error in k is

(1) 0.1%

(2) 1%

(3) 0.2%

(4) 0.8%

122. Radioactive material 'A' has decay constant '8λ' and material 'B' has decay contant 'λ'. Initially they have same number of nuclei. After what time, the ratio of number of nuclei of material 'B' to that 'A' will be $\dfrac{1}{e}$?

(1) $\dfrac{1}{7\lambda}$

(2) $\dfrac{1}{8\lambda}$

(3) $\dfrac{1}{9\lambda}$

(4) $\dfrac{1}{\lambda}$

123. Alternating current in circuit is given by I = $I_0 \sin 2\pi nt$. Then the time taken by the current to rise from zero to r.m.s. value is equal to

(1) $\dfrac{1}{2n}$

(2) $\dfrac{1}{n}$

(3) $\dfrac{1}{4n}$

(4) $\dfrac{1}{8n}$

124. The velocity of a projectile at the initial point A is $\left(2\hat{i} + 3j\right) m/s$. It's velocity (in m/s) at point B is
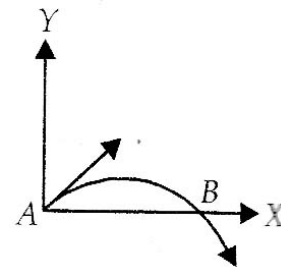
(1) $2\hat{i} - 3\hat{j}$

(2) $2\hat{i} + 3\hat{j}$

(3) $-2\hat{i} - 3\hat{j}$

(4) $-2\hat{i} + 3\hat{j}$

125. A particle falls from a height h upon a fixed horizontal plane and rebounds. If e is the coefficient of restitution, the total distance traveled before rebounding has stopped is

(1) $h\left(\dfrac{1+e^2}{1-e^2}\right)$

(2) $h\left(\dfrac{1-e^2}{1+e^2}\right)$

(3) $\dfrac{h}{2}\left(\dfrac{1-e^2}{1+e^2}\right)$

(4) $\dfrac{h}{2}\left(\dfrac{1+e^2}{1-e^2}\right)$

126. When water rises in a capillary tube of radius 'r' to height 'h', then its potential energy 'U_1', if capillary tube of radius '3r' is dipped in same water then potential energy of water is 'U_2'. Then $U_1 : U_2$ will be

(1) 1 : 1

(2) 1 : 3

(3) 3 : 1

(4) 1 : 9

127. The mean free path of molecules of a gas (radius 'r') is inversely proportional to

(1) r

(2) $\sqrt{r}$

(3) r^3

(4) r^2

128. An air chamber of volume V has a neck area of cross-section 'a' into which a ball of mass 'm' just fits and can move up and down without any friction as shown. When the ball is pressed down a little and released, it executes S.H.M with time period is (B is bulk modulus of elasticity of air)

air
(V)
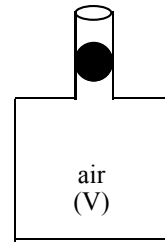
(1) $2\pi\sqrt{\dfrac{Ba^2}{mV}}$

(2) $\dfrac{1}{2\pi}\sqrt{\dfrac{Ba^2}{mV}}$

(3) $2\pi\sqrt{\dfrac{mV}{Ba^2}}$

(4) $\dfrac{1}{2\pi}\sqrt{\dfrac{Ba^2}{mV}}$

129. An open pipe of sufficient length is dipping in water with a speed v vertically. If at any instant ℓ is length of tube above water. Then the rate at which fundamental frequency of pipe changes, is (speed of sound = c)
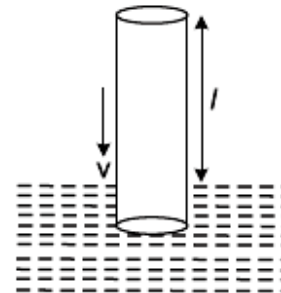
(1) $\dfrac{cv}{2\ell^2}$

(2) $\dfrac{cv}{4\ell^2}$

(3) $\dfrac{c}{2v^2\ell^2}$

(4) $\dfrac{c}{4v^2\ell^2}$

130. A battery with emf E and internal resistance r is connected across an external resistance R. The maximum power in the external circuit is 9 W. The current flowing through the circuit in these conditions is 3A. Then which of the following is correct
(1) E = 6 V
(2) r = R/2
(3) r = 1.5Ω
(4) r = 3Ω

131. A linear harmonic oscillator of force constant $2 \times 10^6 \ Nm^{-1}$ and amplitude 0.01m has total mechanical energy of 160J. Which of the following statements are correct ?

A) The maximum P.E of the particle is 100 J
B) The maximum K.E of the particle is 100J
C) The maximum P.E of the particle is 160J
D) The minimum P.E of the particle is zero
(1) only A is correct
(2) only C is correct
(3) B and D are correct
(4) B and C are correct

132. Two particles of masses m_1 and m_2 $\left(m_1 > m_2\right)$ are separated by a distance 'd'. The shift in the centre of mass when the two particles are interchanged

(1) $\dfrac{\left(m_1 + m_2\right)d}{m_1 - m_2}$

(2) $\dfrac{\left(m_1 - m_2\right)d}{m_1 + m_2}$

(3) Zero

(4) $\dfrac{m_1 m_2 d}{m_1 - m_2}$

133. In the given circuit, with steady current , the potential drop across the capacitor must be
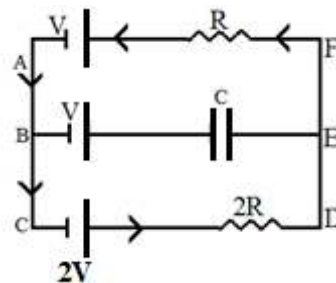
(1) V
(2) V/2
(3) V/3
(4) 2V/3

134. A particle starts from rest and moves with uniform acceleration. If covers a displacement of $y^2 - x^2$ in the first 10 sec and $y^2 + x^2$ in the next 10 sec, then
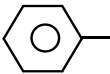(1) $x = \sqrt{2}y$
(2) $x = 3y$
(3) $y = 3x$
(4) $y = \sqrt{2}x$

135. Which of the following junction diodes are forward biased?

(1) c only
(2) b & c only
(3) a,b & c only
(4) b & d only

136. Which of the following is incorrect trend

    (1) Li<Be<B<C …. IP_1

    (2) C<N<O<F …..EN

    (3) O<N<B<Li … Atomic size

    (4) C<B<Be<Li…. Metallic character

137. IUPAC name of $-CH_2CONH_2$ is

    (1) Benzyl methanamide

    (2) 2-Phenyl ethanamide

    (3) Benzyl ethanamide

    (4) Phenylmethyl methanamide

138. A) 3s   B) 3p   C) $3d_{z^2}$ D) $3d_{x^2-y^2}$.

    Nodal plane is absent in

    (1) B,C,D

    (2) A,C only

    (3) B,C only

    (4) B,D only

139. For an element with Z=29, how many electrons are with $n+l=4$
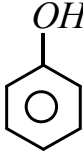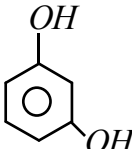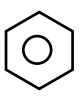
    (1) 9

    (2) 6

    (3) 5

    (4) 7
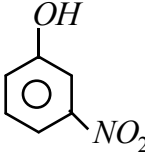
140. $CH_3CH = CHCH_3 \xrightarrow[\Delta]{KMnO_4/H^+} A \xrightarrow{LiAlH_4} B.$

    B is

    (1) C_2H_5OH

    (2) CH_3CHO

    (3) $(CH_3)_2 CHOH$

    (4) $(CH_3)_2 CO$

141.

$$\bigcirc \xrightarrow[Conc.H_2SO_4,<60^0C]{Conc.HNO_3} A \xrightarrow[b)NaNO_2+HCl/278K]{a)Sn/HCl}$$

$$B \xrightarrow{H_3PO_2+H_2O} C. \text{ C is}$$

    (1) OH on benzene ring

    (2) OH benzene ring with OH

    (3) benzene ring

    (4) OH benzene ring with NO_2
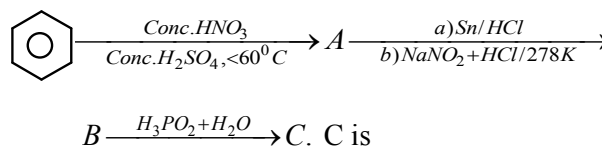
142. In which of the following pair bond order of second species is less than first species

    (1) O_2^{-2}, O_2

    (2) N_2^+, N_2^-

    (3) C_2, B_2

    (4) Li_2^+, Li_2
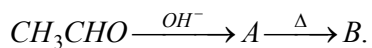
143. Which of the following can involve in hydrogen bonding in vapour state also

    (1) NH_3

    (2) H_2O

    (3) C_2H_5OH

    (4) HF

144. Interstitial hydride of the following is

    (1) CaH_2

    (2) B_2H_6

    (3) LiH

    (4) CrH

145. Correct statement is

$$CH_3CHO \xrightarrow{OH^-} A \xrightarrow{\Delta} B.$$
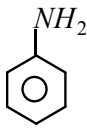
Correct statement is

(1) Both A and B exhibit optical isomerism

(2) Both A and B exhibit geometrical isomerism

(3) A exhibits optical isomerism, B exhibits geometrical isomerism

(4) A exhibits geometrical isomerism, B exhibits optical isomerism

146. K_b is least for

(1)

NH_2 (on benzene ring)

(2) $C_2H_5NH_2$

(3) $(C_2H_5)_2 NH$

(4) $C_6H_5CH_2NH_2$

147. TLV of four pollutants A,B,C,D are 9ppm, 8ppm,10ppm and 12ppm respectively. Most toxic of them is

(1) A

(2) B

(3) C

(4) D

148. By product in Solvay – Ammonia process is

(1) $MgCl_2$

(2) $CaCl_2$

(3) $BaCl_2$

(4) NaCl

149. Which of the following exists only at high temperature
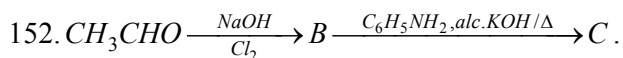
(1) SiO

(2) CO

(3) CO_2

(4) PbO

150. $N \equiv N, H - H, N - H$ bond enthalpies are 945 KJ/mole 436 KJ/mole and 391 KJ/mole respectively then the enthalpy change for the reaction $2NH_3(g) \rightarrow N_2(g) + 3H_2(g)$ is
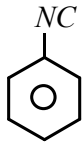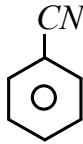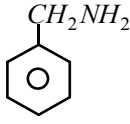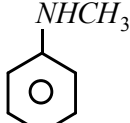
(1) 120 KJ

(2) 93 KJ

(3) 45 KJ

(4) 144 KJ

151. For the reaction $2SO_3(g) \rightleftharpoons 2SO_2(g) + O_2(g)$ the correct relation is

(1) $K_p = \dfrac{K_c}{RT}$

(2) $\log \dfrac{K_p}{K_c} - \log RT = 0$

(3) $K_p = K_c (RT)^2$

(4) $K_p < K_c$

152. $CH_3CHO \xrightarrow[Cl_2]{NaOH} B \xrightarrow{C_6H_5NH_2, alc.KOH/\Delta} C$.

C is

(1)

NC (on benzene ring)

(2)

CN (on benzene ring)

(3)

CH_2NH_2 (on benzene ring)

(4)

$NHCH_3$ (on benzene ring)

153. $CH_2 = CH_2 \xrightarrow[Zn+H_2O]{O_3} A \xrightarrow[H_2O]{CH_3MgBr} B$

$\xrightarrow{Cu/573K} C \xrightarrow[Conc.HCl]{ZnHg} D.$ D is

(1) $CH_3CH_2CH_2CH_3$

(2) $CH_3 - CH = CH_2$

(3) $CH_3 - CH_3$

(4) CH_4

154. 2-pentanone and 3-pentanone are

(1) chain isomers

(2) tautomers

(3) positional isomers

(4) metamers

155. Least reactive towards nucleophilic substitution is
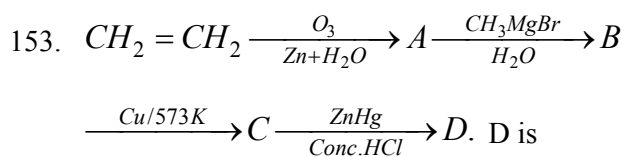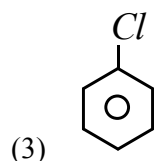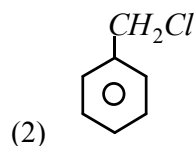
(1) $CH_2 = CH - CH_2Cl$

(2)

CH_2Cl

(3)

Cl

(4) CH_3CH_2Cl

156. 0.1m NaCl(aq) is 50% ionized and 0.1 m Na_2SO_4(aq) is also 50 % ionised. The ratio of elevation in boiling point of NaCl to Na_2SO_4 solution is:

(1) 1 : 2

(2) 3 : 2

(3) 3 : 4

(4) 1 : 3

157. Molar conductance of 0.1M CH_3COOH is 80 mhocm^2 mole^{-1}. Molar conductance of CH_3COOH at infinite dilution is 400mhocm^{2}mole^{-1}. Ionization of constant of CH_3COOH is

(1) 0.5

(2) 0.004

(3) 0.4

(4) 0.002

158. Calculate emf of the cell $Zn / Zn^{+2}(0.01M)//Cu^{+2}(0.01M)/Cu$

$\left(E_{cell}^0 = 1.1V \right)$
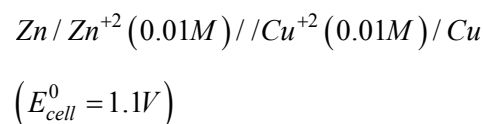
(1) 1.07 V

(2) 1.13 V

(3) 1.1 V

(4) 1.16 V

159. Cheese is an example of

(1) Sol

(2) Solid sol

(3) Solid foam

(4) Gel

160. Rate of a reaction depends on

(1) temperature

(2) concentration of reactants

(3) catalyst

(4) all of these

161. Shape of $XeOF_2$ molecule is

(1) Square pyramidal

(2) Pyramidal

(3) T-shape

(4) Trigonal planar

162. A) Cystine

B) Methionine

C) Tyrosine

D) Threonine

Sulphur containing aminoacids are

(1) A,B,C only

(2) A,B only

(3) A,C,D only

(4) A only

163. Incorrect statement of the following is

(1) White phosphorous is highly reactive

(2) Red phosphorous is insoluble in CS_2

(3) Phosphine is used in smoke screens

(4) Phosphinic acid is dibasic

164. Correct acidic strength is

(1) water > ethyne > ethylalcohol

(2) water > ethylalcohol > ethyne

(3) ethylalcohol > water > ethyne

(4) ethylalcohol > ethyne > water

165. Concentrated nitric acid oxidizes phosphourous to …..and sulphur to …..

(1) H_3PO_4, H_2SO_4

(2) H_3PO_2, H_2SO_3

(3) H_3PO_2, H_2SO_4

(4) H_3PO_3, H_2SO_3

166. Which of the following can reduce Fehling's reagent

(1) sucrose

(2) cellulose

(3) maltose

(4) starch

167. $CH_2 = CH_2 \xrightarrow[cold]{alk.KMnO_4} A \xrightarrow{B} dacron.$

B is

(1) Isopthalic acid

(2) Terpthalic acid

(3) Pthalic acid

(4) Adipic acid

168. Which of the following is an antibiotic

(1) Paracetomol

(2) Aspirin

(3) Chloroxylenol

(4) Oflaxacin

169. Which of the following is not a disproportionation reaction

(1) $MnO_4^{-2} \rightarrow MnO_4^- + MnO_2$

(2) $Cu^+ \rightarrow Cu^{+2} + Cu$

(3) $MnO_4^- \rightarrow MnO_4^{-2} + MnO_2 + O_2$

(4) $NO_2^- \rightarrow NO_3^- + NO$

170. 2 moles of magnesium reacts with 1.25 moles of oxygen to give _____grams of MgO

(1) 40g

(2) 80g

(3) 60g

(4) 90g

171. Which of the following contain eight unpaired electrons

(1) Pr (Z=59)

(2) Yb (Z=70)

(3) Gd (Z=64)

(4) Tm (Z=69)

172. Which of the following does not give precipitate with AgNO₃ solution

(1) $CoCl_3.3NH_3$

(2) $CoCl_3.4NH_3$

(3) $CoCl_3.5NH_3$

(4) $CoCl_3.6NH_3$

173. Which of the following exhibits colour due to d-d transitions

(1) $KMnO_4$

(2) $K_2Cr_2O_7$

(3) K_2CrO_4

(4) K_2MnO_4

174. Peroxy linkage is absent in

(1) H_2SO_5

(2) $H_2S_2O_8$

(3) HNO_4

(4) $HClO_4$

175. Critical temperature is highest for

(1) H₂

(2) N₂

(3) H₂O(g)

(4) O₂

176. At STP a container has 1 mole of He, 2 moles of Ne, 3 moles O₂ and 4 moles N₂. Pressure exerted by Nitrogen would be

(1) 304 mm

(2) 152 mm

(3) 228 mm

(4) 76 mm

177. $A \xrightarrow{K=0.1\min^{-1}} B$. Time taken for 99.9% of the reaction to get completed will be

(1) 6.93 min

(2) 69.3 min

(3) 693 min

(4) 6930 min

178. $H_2O(l) \rightleftharpoons H_2O(g)$. ΔG for the reaction at 373K and 1atm will be

(1) 540 cal

(2) zero

(3) 18 cal

(4) 980 cal

179. Calomel is mercurous chloride which exist as a dimer. If its molar solubility in water is 10^{-2}M then its solubility product will be

(1) 4×10^{-6}

(2) 4×10^{-4}

(3) 4×10^{-8}

(4) 8×10^{-6}

180. Hybridization of Boron atoms in $Na_2\left[B_4O_5(OH)_4\right].8H_2O$

(1) sp^3 only

(2) sp^2 only

(3) sp^3, sp^2

(4) sp, sp^2

SRI CHAITANYA EDUCATIONAL INSTITUTIONS, INDIA

A.P,TELANGANA,KARNATAKA,TAMILNADU,MAHARASHTRA,DELHI,RANCHI,CHANDIGARH

SR ELITE & AIIMS S60　　　　**NEET GRAND TEST – 3 KEY**　　　　**Date : 21-01-2020**

BOT : 1, 2, 5, 7, 9, 11, 12, 13, 17, 19, 21, 22, 23, 27, 29, 31, 33, 35, 36, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 68, 69, 73, 75, 77, 79, 81, 82, 85, 87, 88

ZOO : 3, 4, 6, 8, 10, 14, 15, 16, 18, 20, 24, 25, 26, 28, 30, 32, 34, 37, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 70, 71, 72, 74, 76, 78, 80, 83, 84, 86, 89, 90

BIOLOGY

1) **2**	2) **4**	3) **4**	4) **3**	5) **2**	6) **4**	7) **1**	8) **1**	9) **4**	10) **3**
11) **2**	12) **4**	13) **1**	14) **4**	15) **2**	16) **1**	17) **4**	18) **2**	19) **3**	20) **3**
21) **1**	22) **3**	23) **2**	24) **1**	25) **3**	26) **4**	27) **3**	28) **1**	29) **3**	30) **4**
31) **3**	32) **2**	33) **4**	34) **3**	35) **2**	36) **4**	37) **1**	38) **4**	39) **1**	40) **4**
41) **2**	42) **3**	43) **3**	44) **1**	45) **4**	46) **2**	47) **1**	48) **3**	49) **2**	50) **3**
51) **2**	52) **1**	53) **3**	54) **2**	55) **1**	56) **1**	57) **1**	58) **4**	59) **4**	60) **3**
61) **3**	62) **4**	63) **1**	64) **4**	65) **3**	66) **4**	67) **1**	68) **3**	69) **2**	70) **1**
71) **3**	72) **2**	73) **1**	74) **4**	75) **1**	76) **3**	77) **3**	78) **1**	79) **1**	80) **1**
81) **1**	82) **1**	83) **2**	84) **3**	85) **2**	86) **3**	87) **3**	88) **2**	89) **4**	90) **1**

PHYSICS

91) **3**	92) **4**	93) **3**	94) **4**	95) **1**	96) **2**	97) **3**	98) **1**	99) **4**	100) **3**
101) **1**	102) **3**	103) **3**	104) **2**	105) **3**	106) **3**	107) **1**	108) **1**	109) **2**	110) **1**
111) **1**	112) **1**	113) **3**	114) **2**	115) **2**	116) **2**	117) **2**	118) **3**	119) **2**	120) **3**
121) **3**	122) **1**	123) **4**	124) **1**	125) **1**	126) **1**	127) **4**	128) **3**	129) **2**	130) **1**
131) **4**	132) **2**	133) **3**	134) **4**	135) **2**					

CHEMISTRY

136) **1**	137) **2**	138) **2**	139) **4**	140) **1**	141) **3**	142) **3**	143) **4**	144) **4**	145) **3**
146) **1**	147) **2**	148) **2**	149) **1**	150) **2**	151) **2**	152) **1**	153) **3**	154) **4**	155) **3**
156) **3**	157) **2**	158) **3**	159) **4**	160) **4**	161) **3**	162) **2**	163) **4**	164) **2**	165) **1**
166) **3**	167) **2**	168) **4**	169) **3**	170) **2**	171) **3**	172) **1**	173) **4**	174) **4**	175) **3**
176) **1**	177) **2**	178) **2**	179) **1**	180) **3**					