GURU'S EDUCATIONAL INSTITUTIONS

MANGALAGIRI – GUNTUR- VIJAYAWADA

NEET GRAND TEST – 1, Dt.23-04-2018

SR.INTER / LONG TERM

[Time: 3 Hours] [Max Marks: 720 (180x4)]

IMPORTANT INSTRUCTIONS :

1. The question paper for NEET-2018 consists of 180 questions comprising 45 questions in Botany, 45 in Zoology, 45 in Physics and 45 in Chemistry.
2. All questions are of **objectivetype** (Multiple choices only),
4. Each question carries **four** marks.
5. Negative marking: **one** mark will be deducted for every wrongly answered question.
6. **Use Blue/Black Ball Point Pen only** to darken the appropriate circle. Answers marked with pencil would not be evaluated.

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1. Identify the odd one with regard to rank

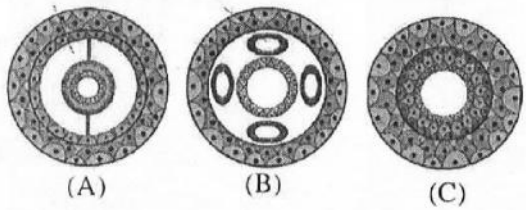
(1) Felidae

(2) Canidae

(3) Ailuridae

(4) Carnivora

2. Identify the given diagram A,B and C for phylum :-



(A) (B) (C)

(1)	A- Platyhelminthes	B- Aschelminthes	C- Annelida
(2)	A- Platyhelminthes	B- Annelida	C- Aschelminthes
(3)	A- Annelida	B- Platyhelminthes	C- Aschelminthes
(4)	A- Annelida	B- Aschelminthes	C- Platyhelminthes

3. Identify the correct match

List – I	List – II
A. Slime moulds	I. No cell wall, Mixotrophs
B. Chryso phytes	II. Cell wall present, Autotrophs
C. Dinoflag ellates	III. No cell wall, heterotrophs
D. Eugle noids	IV. Indestructible cell walls, Autotrophs

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

4. **Fertilisation is internal in :-**

(1) Rana tigrina, Psittacula, Scoliodon

(2) Hippocampus, Rana tigrina, Testudo

(3) Neophron, Chameleon, Scoliodon

(4) Bufo, Clarios, Pavo

5. **Viruses are**

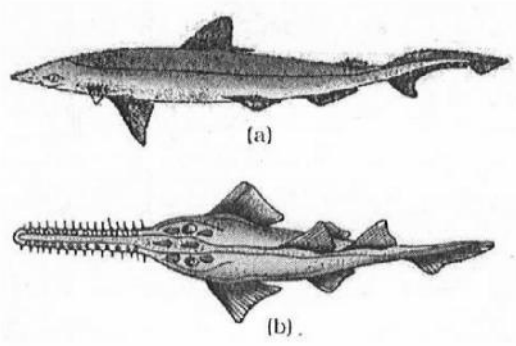
(1) Intracellular

(2) Obligate parasites

(3) Nucleo proteins

(4) All the above

6. **Identify the organism and their common name : -**



(1) a-Hippocampus (sea horse); b-Catla (Katla)

(2) a-Clarias (Magur); b-Labeo (Rohu)

(3) a-Labeo (Rohu); b-Clarias (Magur)

(4) a-Scoliodon (Dog fish); b-Pristis (Saw fish)

7. **Which animals belongs to the largest phylum and the second largest phylum of animalia respectively ?**

(1) *Pila and Apis*

(2) *Aedes and Loligo*

(3) *Locusta and Pheretima*

(4) *Nereis and Octopus*

8. **Identify the correct statement**

A) In *Marchantia* the gametophyte is dioecious and the sporophyte is homosporous

B) *Salvinia* sporophyte is heterosporous and gametophyte is dioecious

C) *Cycas* gametophyte is dioecious and sporophyte is dioecious

D) Maize sporophyte is monoecious and gametophyte is dioecious

(1) A, C only

(2) B, D only

(3) D only

(4) A, B, C, D

9. **Pyriform gametes are formed in the life cycle of**

(1) *Chara*

(2) *Ectocarpus*

(3) *Volvox*

(4) *Porphyra*

10. **Each malipighian tubule of cockroach is lined by :-**

(1) Glandular and ciliated cells

(2) Non-Glandular and ciliated cells

(3) Non-Glandular and non-ciliated cells

(4) Glandular and stratified epithelium

11. **Identify the following aestivation**

(1) Imbricate

(2) Valvate

(3) Twisted

(4) Vexillary

12. **Chilli, Gulmohar, *Canna*, *Cassia*, Mustard, Bean, *Datura***

How many flowers are having bilateral symmetry?

(1) 5

(2) 6

(3) 2

(4) 3

13. **"Histamine" the inflammation producing substances are produced by which cells of the body.**

(1) Mast cells

(2) Macrophages

(3) Basophils

(4) (1) & (3) Both

14. **Which of the following epithelium is found in the urinary bladder ?**

(1) Simple squamous epithelium

(2) Pseudostratified epithelium

(3) Transitional epithelium

(4) Non - Keratinised stratified squamous epithelium

15. **Identify the mismatch**

(1) Asparagus - Vegetables

(2) Lupin - Ornamental

(3) Muliathi - Ornamental

(4) Tulip – Ornamental

16. **Which one of the following options gives correct categorization of three kind of digestive juices with their content and pH, at which they work :-**

	A Gastric juice	B Pancreatic juice	C Intestinal Juice
(1)	Pepsin pH = 7.8	Tryspin pH = 1.8	Nucleases pH = 2-3
(2)	Trypsin pH = 7.8	Pepsin pH = 1.8	Nucleases pH = 1.8
(3)	Pepsin pH = 1.8	Trypsin pH = 7.8	Enterokinase pH = 7.8
(4)	Pepsin pH = 1.8	Trypsin pH = 2-3	Sucrase pH = 1.8

17. **The fruit of mango differs from that of coconut with respect to**

(1) Mesocarp

(2) Endocarp

(3) Drupe

(4) Single Seeded

18. **Companion cell, mature sieve cell, tracheids, guard cell, sclereid, root hair, vessel element.**

How many of the above are living?

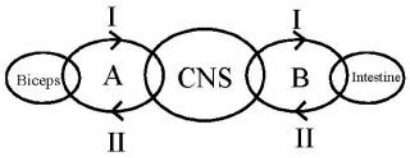
(1) 5

(2) 3

(3) 6

(4) 4

19. **In the following diagram, Identify the parts labelled A,B, I and II and choose the correct option :-**



S. No.	A	I	II	B	I	II
(1)	SNS	Afferent	Efferent	ANS	Sensory	Motor
(2)	ANS	Afferent	Efferent	SNS	Sensory	Motor
(3)	SNS	Afferent	Efferent	ANS	Motor	Sensory
(4)	CNS	Afferent	Efferent	ANS	Sensory	Motor

20. **Partial pressure of carbon dioxide in Alveoli, atmospheric air and tissues will be :-**

(1) 0.3, 40, 45

(2) 40, 0.3, 45

(3) 0.3, 104, 28

(4) 104, 159, 40

21. The maximum volume of air a person can breathe in after a forced expiration is :-

(1) FRC

(2) VC

(3) TLC

(4) EC

22. Which of the following factors favour the dissociation of HbO_2 at tissue level?

(1) $pO_2 \downarrow pCO_2 \uparrow H^+ \uparrow, temperature \uparrow$

(2) $pO_2 \uparrow pCO_2 \uparrow H^+ \uparrow, temperature \uparrow$

(3) $pO_2 \uparrow pCO_2 \downarrow H^+ \downarrow, temperature \downarrow$

(4) $pO_2 \uparrow pCO_2 \downarrow H^+ \downarrow, temperature \uparrow$

23. Identify the incorrect statement regarding secondary growth in dicot stem

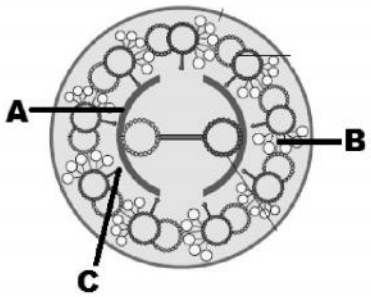
(1) Lateral meristems contribute to secondary growth

(2) Secondary vascular rays are formed

(3) Spring wood is lighter in colour and has lower density

(4) Bark constitutes wood and periderm

24.



Identify A, B, C respectively

(1) Central sheath, Inter doublet bridge, Plasma membrane

(2) Inter doublet bridge, Central sheath, Radial spoke

(3) Central sheath, Inter doublet bridge, Radial spoke

(4) Central sheath, Inter doublet bridge, Central micro tubule

25. Unrelated to lysosomes is

(1) Formed from golgi apparatus

(2) They contain hydrolytic enzymes

(3) They are inactive at acidic pH

(4) Autophagy and heterophagy

26. Second heart sound (DUP) is produced due to :-

(1) Closure of semilunar valve

(2) Closure of tricuspid valve

(3) Opening of bicuspid valve

(4) Opening of semilunar valve

27. Identify the incorrect statement regarding enzymes

(1) K_m of an enzyme is $\frac{1}{2}V_{max}$

(2) Lyases remove groups from substrate by leaving double bonds

(3) All enzymes of an organism have the same optimum pH

(4) All enzymes of an organism have the same optimum temperature

28. ABO blood groups are controlled by the gene I. The plasma membrane of the red blood cells has which polymers that protrude from its surface and controlled by the gene I ?

(1) Sugar polymers

(2) Protein polymers

(3) Lipid polymers

(4) No such polymer present

29. Papillary muscles are present :-

(1) In the dermis of skin of mammals

(2) In the ventricles of heart of rabbit

(3) In the eye orbit of vertebrates

(4) In the stomach of parrot

30. Identify the mismatch

(1) Abrin - Toxin

(2) Curcumin - Drug

(3) Gums – Polymeric substances

(4) GLUT – 4- Enables insulin transport into cells

31. In animal cells during the cell cycle, the centriole duplicates in the following phase

(1) G_1

(2) G_2

(3) M

(4) S

32. Which is not a significance of mitosis?

(1) To restore the nucleo – cytoplasmic ratio

(2) Cell repair

(3) Growth of multicellular organisms

(4) Variations

33. Conditional reabsorption of $Na^{\oplus}$ and water takes place in :-

(1) PCT

(2) DCT

(3) Henle's loop

(4) Bowman's capsule

34. Root pressure

(1) Is positive

(2) Is driving force for guttation

(3) Is responsible for exudation

(4) All the above are correct

35. Following is a tabular representation of differences between Juxtamedullary and Cortical nephron. Find out the correct difference :-

	Feature	Juxta medullary nephron	Cortical nephron
(1)	Size	Smaller	Larger
(2)	Loop of Henle	Longer	Short
(3)	Presence	85 % of total nephrons	15% of total nephrons
(4)	Fun ction	Control plasma volume when water supply is normal	Control plasma volume when water supply is short

36. During muscular contraction Ca^{++} ions bind with a subunit of :-

(1) Actin

(2) Myosin

(3) Troponin

(4) Tropomyosin

37. Find out the correct match :-

a) Limbic system – regulation of sexual behaviour along with hypothalamus

b) Thalamus - Controls body temperature, urge for eating and drinking

c) Association area – Intersensory association, memory and communication

d) Pons - Consist fibre tracts that interconnect different brain regions

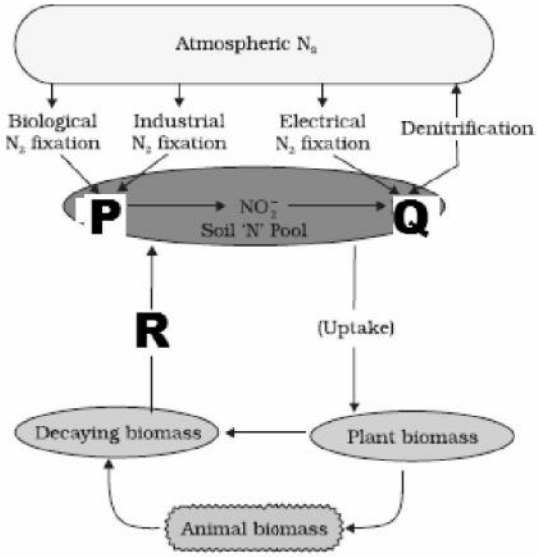
(1) Only a, b, c correct

(2) Only a, c correct

(3) Only b, c, d correct

(4) Only a, c, d correct

38.



Identify P, Q, R respectively

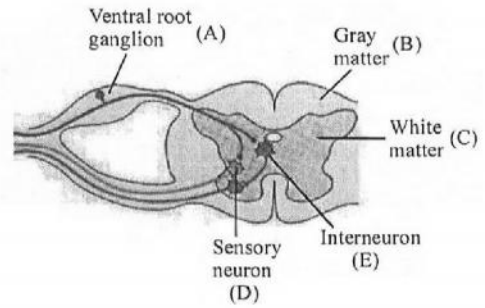
(1) $NH_3, NO_2^-, Ammonification$

(2) $NO_3^-, NH_3, Nitrification$

(3) $NH_3, NO_3^-, Nitrification$

(4) $NH_3, NO_3^-, Ammonification$

39. Find out the correct labelling in the following diagram



(1) A

(2) B

(3) D

(4) E

40. Boron is not concerned with

(1) Membrane functioning

(2) Pollen transfer

(3) Sucrose translocation

(4) Uptake and utilization of Ca^{2+}

41. Grave's disease occur due to :-

(1) Hypo secretion of hypothalamic hormone

(2) Hypo secretion of corticoides hormone

(3) Hypo secretion of pituitary hormone

(4) Hyper secretion of thyroid hormone

42. The effect of insulin is :-

(1) Increase of blood glucose

(2) Decrease of blood glucose

(3) Inhibition of glucagon secretion.

(4) Production of histamine

43. Primary carboxylation, Calvin cycle, decarboxylation, secondary carboxylation, regeneration of primary CO_2 acceptor

How many of the above occur in bundle sheath cells of C_4 plant ?

(1) 6

(2) 3

(3) 4

(4) 2

44. Statement I : NADH is oxidized to NAD^+ rather slowly in fermentation than aerobic respiration

Statement II : Glycerol would enter the respiratory pathway after being converted to PGAL

(1) Both Statement-I & Statement-II are correct

(2) Both Statement-I & Statement-II are incorrect

(3) Statement-I is correct and Statement-II is incorrect

(4)Statement-I is incorrect and Statement-II is correct

45. Identify the mis-match

(1) 2, 4 - D - Synthetic auxin

(2) Gibberellins - Speed up seed germination

(3) Cytokinins - Cause apical dominance

(4) Ethylene - promotes female flowers in cucumbers

46. Corticoids hormones are secreted by :-

(1) Adrenal cortex

(2) Adrenal medulla

(3) Parathyroid

(4) Thyroid

47. In potato the chromosome number is three times more than that of

(1) Rice

(2) *Pisum*

(3) Apple

(4) Onion

48. Which one of the following structure of sperms is mismatched?

(1) Acrosome – Contain sperm lysins that help in fertilization

(2) Nucleus - Contain DNA

(3) Distal centriole - Starts cleavage in zygote

(4) Middle piece – Contain mitochondria, which produce energy for movement of tail

49. Identify the incorrect regarding external fertilization

(1) A major advantage is that the offsprings are extremely vulnerable to predators

(2) Syngamy occurs in the external medium (water)

(3) Shows great synchrony between the sexes

(4) Release a large number of gametes into the surrounding medium

50. Which of the following statement is wrong ?

(1) The male germ cells undergo meiotic division leading to sperm formation.

(2) The function of male sex accessory ducts and glands are maintained by the testicular hormones.

(3) Presence or absence of hymen is not reliable indication of virginity.

(4) FSH act on leydig cells in release some factor which help in spermiogenesis.

51. Ploidy of scutellum, perisperm, aleurone layer, coleorhiza and polar nucleus respectively are

(1) n, 2n, 3n, 2n, n

(2) 2n, 2n, 3n, 2n, n

(3) 2n, 3n, 2n, 2n, n

(4) 2n,2n,3n,2n,2n

52. Seed dormancy may be caused by

(1) Abscisic acid

(2) Para-ascorbic acid

(3) Phenolic acid

(4) All the above

53. Incorrect statement regarding embryosac is

(1) Largest cell is central cell

(2) In monosporic embryosac all the cells are genotypically dissimilar

(3) Typical embryosac is 8 nucleate, 7 celled

(4) Each embryosac consists of a single female gamete

54. Wrong statement with respect to the female reproductive system is:

(1) Each ovary is covered by a thin epithelium with stroma enclosed

(2) Stroma of ovaries has two parts cortex and medulla

(3) Oviducts, uterus and vagina constitute the major accessory glands

(4) The part of fallopian tube closer to the ovaries is the funnel shaped infundibulum

55. If not timely detected, STD's can result in :

(1) PID, ectopic pregnancies, cancer of reproductive tract

(2) Still births, zygotic twins

(3) Cancer of cervix, fraternal twins

(4) All of the above

56. During hybridization, emasculation is not required for

(1) Monoecious plants

(2) Dioecious plants

(3) Male sterile female parent

(4) All the above

57. Find an incorrect statement with respect to findings of HGP :-

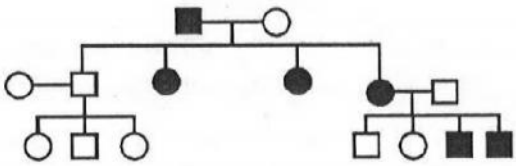
(1) Dystrophin protein gene is largest gene of human genome

(2) Chromosome –Y has 231 genes

(3) SNP's were identified at about 2.4 million locations.

(4) The functions are unknown for over 50% of discovered genes.

58. **Given below is a pedigree of a family suffering from a genetical disorder.**



After observing the inheritance pattern, find out that which of the following disorder can produce such type of pedigree ?

(1) G-6-PD

(2) Colourblindness

(3) Haemophilia

(4) Myotonic dystrophy

59. **The phenotypic and genotypic ratio is 1 : 2 : 1 in the F_1 generation of plants with**

(1) complete dominance

(2) incomplete dominance

(3) codominance

(4) 2 and 3

60. **The expression of genes, for the production of milk in only female is :-**

(1) Sex linked trait

(2) Y-linked trait

(3) Sex limited trait

(4) Sex influenced trait

61. **The process of evolution of different species in a given geographical area starting from a point and literally radiating to other area of geography (habitat) is called :-**

(1) Convergent evolution

(2) Parallel evolution

(3) Adaptive radiation

(4) Both 1 and 2

62. **Which of the following evidences does not favour the Lamarckian concept of use and disuse?**

(1) Absence of limbs in snakes

(2) Presence of webbed toes in aquatic birds

(3) Lack of pigment in cave-dwelling animals

(4) Sickle cell anaemia and malarial resistance

63. **In a plant, if two dominant genes C and P are necessary for appearance of purple colour in flower. What will be the ratio of purple and white flowered plants n the cross Cc Pp x Cc Pp ?**

(1) 9 : 3 : 3 : 1

(2) 13 : 3

(3) 12 : 3 : 1

(4) 9 : 7

64. Identify the incorrect regarding genetic code

(1) ambiguous

(2) degenerate

(3) non-overlapping

(4) comma less

65. In lac operon gene regulation the following regulates switching on and off of the operon

(1) Promoter

(2) Galactose

(3) Lactose

(4) β – galactosidase

66. Which of the following describes correctly the homologous structures :-

(1) Organs with anatomical similarities, but performing different or same functions

(2) Organs with anatomical dissimilarities but performing same function

(3) Organs that have no function now, but had an important function in ancestors

(4) Organs appearing only in embryonic stage and disappearing later in the adult

67. If Meselson and Stahl's experiment is continued for four generations in bacteria, the ratio of

$^{15}N/^{15}N : ^{15}N/^{14}N : ^{14}N/^{14}N$

containing DNA in the fourth generation would be:

(1) 1:1:0

(2) 1:4:0

(3) 0:1:3

(4) 0:1:7

68. A mutation at one base of first codon of a gene forms a non functional protein. It is called as

(1) Non-sense mutation

(2) Mis – sense mutation

(3) Same-sense mutation

(4) Reverse mutation

69. Which of the following is correct order of the evolutionary history of man:-

(1) Peking man, *Homo sapiens*, Neanderthal man, Cromagnon man

(2) Peking man, Neanderthal man , *Homo sapiens*, Cromagnon man

(3) Peking man, Heidelberg man, Neanderthal man, Cromagnon man

(4) Peking man, Neanderthal man, *Homo sapiens*, Heidelberg man

70. Our health is affected by :-

a) Genetic disorders

b) Infections

c) Life style

(1) a only

(2) b, c only

(3) a, b only

(4) a, b, c

71. Creation of a new character or trait not found in the parental type is possible by this method

(1) Hybridization

(2) Introduction

(3) Selection

(4) Mutation breeding

72. Abdominal spasm, vomiting, Internal bleeding and intestinal blockage are caused by which of the following :-

(1) *Wuchereria bancrofti*

(2) Common round worm

(3) *Plasmodium falciparum*

(4) Toga virus

73. Which of the following is not a component of innate immunity

(1) Interferons

(2) Phagocytes

(3) Skin

(4) Lymphocytes

74. Chemicals useful for chemo fusion of protoplasts are

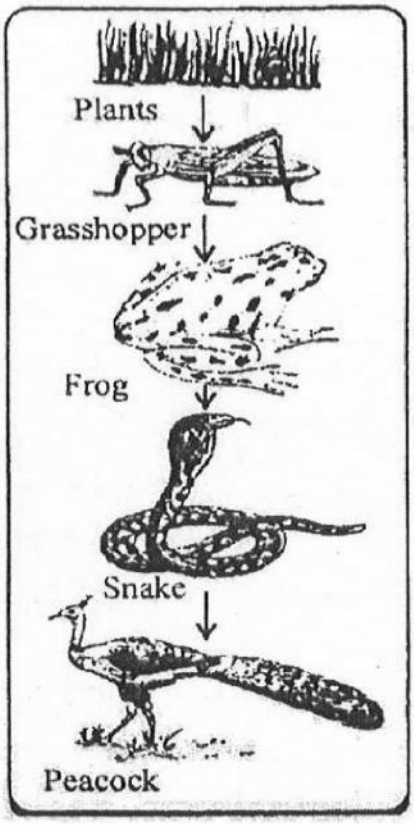
(1) Sodium nitrate

(2) Polyethylene glycol

(3) Ethanol

(4) 1 & 2

75.



The diagram is showing which type of food chain?

(1) Grazing

(2) Parasitic

(3) Detritus

(4) None

76. Identify the incorrect statement regarding sewage treatment

(1) Primary treatment does not involve microorganisms

(2) Flocs are the association of fungi and bacteria

(3) Biogas is obtained from anaerobic sludge digesters

(4) Activated sludge contain anaerobic microorganisms

77. Fill in the blank.

A..... is a unit of land with a natural boundary having a mosaic of patches. There patches generally represent different .....

(1) Biome, Landscapes

(2) Biome, Ecosystems

(3) Landscape, Ecosystems

(4) Landscape, Biomes

78. Which is/are incorrect from followings?

A) Population ecology links ecology to population genetics and evolution.

B) The size of the population tells us a lot about its status in the habitat

C) If a new habitat is just being colonized, Birth rate contributes more significantly to population growth than immigration

D) Since resources for growth for most animal population are finite and become limiting sooner or later, the exponential growth model is considered a more realistic one.

(1) A & B are incorrect

(2) B & C are incorrect

(3) C & D are incorrect

(4) D and A are incorrect

79. Acellular biological control agent is

(1) *Bacillus thuringiensis*

(2) *Trichoderma*

(3) Nucleopolyhedrosis virus

(4) *Beauveria bassiana*

80. In PCR, eight DNA molecules (restriction fragments) are formed after 3 cycles, then out of them, how many are of desired length ?

(1) 8

(2) 4

(3) 2

(4) 6

81. "Kaziranga" is very famous for :-

(1) Tiger

(2) Rhinoceros

(3) Birds

(4) Lion

82. In gel electrophoresis which of the following is key determinant of migration rate of DNA fragments

(1) Shape of molecule

(2) Charge of molecule

(3) Length of molecule

(4) All the above

83. Sal, Teak, Tendu, Khair and Chiranunji are the common trees of which of the following Indian biomes:-

(1) Tropical rain forest

(2) Deciduous forest

(3) Taiga

(4) Savanna

84. Which of following is used as carrier of transferring of selected DNA into cells ?

(1) A plasmid

(2) Artificial chromosome, BAC

(3) Artificial chromosomes, YAC

(4) All of the above

85. Bt toxin gene which controls corn borer is

(1) cry IAb

(2) cry IAc

(3) cry IIAb

(4) cry IIAc

86. Temperature variation in Pacific ocean in present time is called:-

(1) Cyclone effect

(2) EINino effect

(3) Green house effect

(4) Gaudikov's effect

87. Concentration of DDT is maximum in birds feeding on?

(1) Fishes

(2) Snail

(3) Insects

(4) Seeds

88. Arrange the following in a sequence which occur in hydrosere

A) Rooted submerged plants
B) Rooted floating plants
C) Phytoplanktons
D) Free floating plants
E) Reed swamp

(1) C – B – A – D - E

(2) C – A – B – E - D

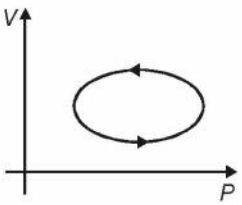
(3) C – A – D – B - E

(4) C – A – B – D - E

89. **Ecological succession is the gradual, predictable replacement of**
(1) Population
(2) Species
(3) Community
(4) Biome

90. **Which kind of animal breeding is not correctly matched with its utility ?**
(1) To combine characters of two different species – Interspecific hybridization
(2) To combine characters of two different breeds- Cross breeding
(3) To remove inbreeding depression – Out crossing
(4) To obtain pure lines – Out breeding

91. **In the following indicator diagram, the net work done by the gas in one complete cycle is**



(1) Positive
(2) Negative
(3) Zero
(4) Infinity

92. **In an ac circuit, the current lags behind the voltage by $\frac{\pi}{3}$. The components in the circuit are**
(1) R and L
(2) R and C
(3) L and C
(4) Only R

93. **A train moves towards a stationary observer with speed 40 m/s. The train sounds a whistle and its frequency registered by the observer is f_1. If the trains's speed is reduced to 20 m/s, the frequency registered is f_2. If the speed of sound is 340 m/s, then the ratio of $\frac{f_1}{f_2}$ is**
(1) $\frac{15}{16}$
(2) $\frac{1}{2}$
(3) 2
(4) $\frac{16}{15}$

94. **A bird is at a height X above the water surface and a fish is at a depth Y below the surface. If the two are in a vertical line and μ in the refractive index of water w.r.t air, then distance of the fish as observed by the bird is**
(1) $X+\frac{Y}{\mu}$
(2) $\mu X+\frac{Y}{\mu}$
(3) μX + Y
(4) X + μY

95. A car of mass m has engine which can deliver power P. The maximum speed that the car can attain after starting from rest in t seconds is

(1) $\sqrt{\frac{3}{4}\frac{Pt}{m}}$

(2) $2\sqrt{\frac{Pt}{m}}$

(3) $\sqrt{\frac{2Pt}{m}}$

(4) $\sqrt{\frac{Pt}{m}}$

96. In a Young's double slit experiment, the intensity at the central maximum is I_0. The intensity at a distance $\beta/2$ above the central maximum is (where β = fringe width)

(1) $\frac{I_0}{2}$

(2) $\frac{I_0}{\sqrt{2}}$

(3) $\frac{I_0}{4}$

(4) Zero

97. A gas mixture contains 8 moles of oxygen and 2 moles of argon at room temperature T. The total internal energy of the mixture is

(1) 11 RT

(2) 23 RT

(3) 22 RT

(4) 26 RT

98. The half life of a radioactive material is T, then the fraction of radioactive nuclei remain after time $\frac{T}{2}$ is

(1) $\frac{1}{2}$

(2) $\frac{3}{4}$

(3) $\frac{1}{\sqrt{2}}$

(4) $\frac{\sqrt{2}-1}{\sqrt{2}}$

99. In an electromagnetic wave, the amplitude of electric field is 1 V/m. What is average energy density of electric field?

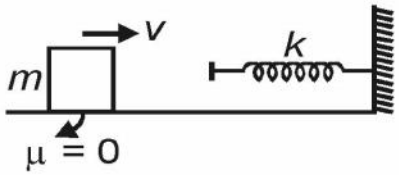
(1) 2.2×10^{-12} J/m^3

(2) 4.4×10^{-12} J/m^3

(3) 3×10^{-9} J/m^3

(4) 12×10^{-12} J/m^3

100. A block of mass m is moving on smooth horizontal surface. A spring of spring constant K is arranged as shown. Then maximum force applied by spring is proportional to



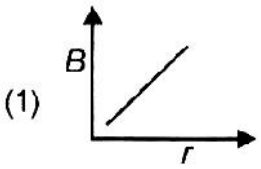
(1) v^2

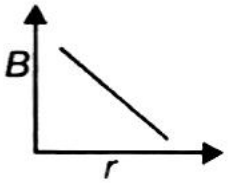
(2) v^3

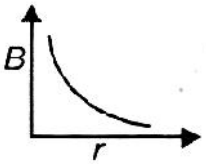
(3) v^4

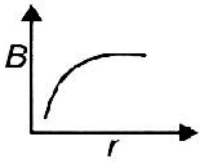
(4) v

101. **Which one of the following graphs shows the variation of magnetic induction 8 with distance *r* from a long wire carrying a current?**

(1) 

(2) 

(3) 

(4) 

102. **A radioactive nucleus emits an α particle and a neutron simultaneously with same speed but in opposite direction in order to form a stable nuclei. If the speed of emitted particles is v and A is the mass number of radioactive nucleus then speed of stable nucleus is**

(1) $\frac{3v}{A-5}$

(2) $\frac{2v}{A-5}$

(3) $\frac{4v}{A-5}$

(4) $\frac{2v}{A+5}$

103. **Dimensional formula of a physical quantity is $[M^{-1}L^{3}T^{-2}]$. The errors in measuring quantities M, L and T respectively are 2%, 3% and 4%. The maximum percentage error that occurs in measuring the quantity is**

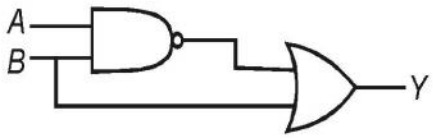
(1) 9

(2) 10

(3) 14

(4) 19

104. **Give the output of the given logic gate**



(1) $Y = \bar{A}B + \bar{B}$

(2) $Y = \bar{A}B + \bar{B}A$

(3) $Y = 1$

(4) $Y = (\bar{A} + \bar{B})\bar{B}$

105. **What is the minimum coefficient of friction for a solid sphere to roll without slipping on an inclined plane of inclination θ?**

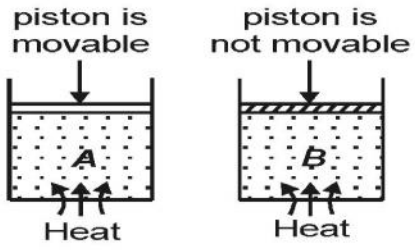
(1) $\frac{2}{7}\tan\theta$

(2) $\frac{1}{3}g\tan\theta$

(3) $\frac{1}{2}\tan\theta$

(4) $\frac{2}{5}\tan\theta$

106. Two cylinders contain ideal diatomic gas. As shown in figure Same amount of heat is given to the two cylinders. If temperature rise in cylinder B is T_0 then temperature rise in cylinder A will be



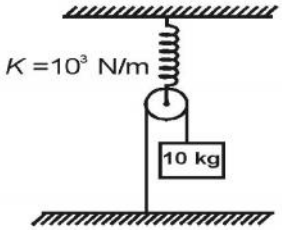
(1) $\frac{7}{5}T_0$

(2) $2T_0$

(3) $\frac{3}{5}T_0$

(4) $\frac{5}{7}T_0$

107. For the arrangement shown in the figure. The extension in the spring, for which the block remains at rest is ($g = 10\ m/s^2$)



(1) 20 cm

(2) 25 cm

(3) 15 cm

(4) 30 cm

108. Two long parallel wires carrying currents I_1 and I_2 in same direction separated by distance r, exert force F on each other. Now current in one of them is increased to three times. The distance is also increased to four times. The new value of force between them is

(1) $\frac{4}{3}F$

(2) $\frac{3}{4}F$

(3) $\frac{3}{16}F$

(4) $\frac{9}{4}F$

109. If a metallic surface is illuminated by radiation of frequency n($n > n_0$), then the maximum kinetic energy of the emitted photoelectron is K. If the same surface is again illuminated by a radiation of frequency 3n, then the kinetic energy of emitted photoelectrons will be

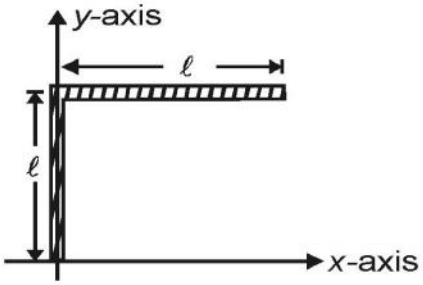
(1) Doubled

(2) Halved

(3) Tripled

(4) More than tripled

110. A rod of length 2l is bent as shown in figure. Coordinates of centre of mass are



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

(2) $\left(\frac{\ell}{8}, \frac{\ell}{8}\right)$

(3) $\left(\frac{\ell}{4}, \frac{3\ell}{4}\right)$

(4) $\left(\frac{\ell}{3}, \frac{\ell}{6}\right)$

111. Two identical circular loops of metal wire are lying on a table without touching each other. Loop A carries a current which increases with time. In response, the loop B

(1) Remains stationary

(2) Is attracted by the loop A

(3) Is repelled by the loop A

(4) Rotates about its centre of mass with centre of mass fixed

112. A plano convex lens is silvered at its convex surface. The refractive index and the radius of curvature of the lens are $\frac{3}{2}$ and 30cm respectively. Then the effective focal length will be

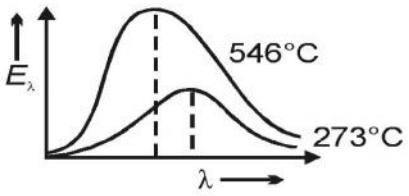
(1) 20 cm

(2) 10 cm

(3) 40 cm

(4) 15 cm

113. The spectra of a black body at temperatures 273°C and 546°C are shown in the figure. If A_1 and A_2 be the areas under the two curves respectively, the value of $\frac{A_2}{A_1}$ is



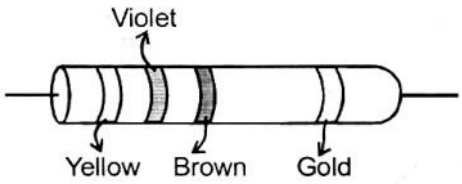
(1) $\frac{81}{16}$

(2) $\frac{16}{1}$

(3) $\frac{27}{8}$

(4) $\frac{16}{81}$

11. A carbon resistor has coloured strips as shown in figure. What is its resistance?



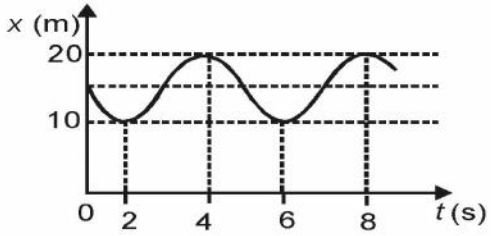
(1) 410 Ω ± 2%

(2) 470 Ω ± 5%

(3) 420 Ω ± 3%

(4) 405 Ω ± 2%

115. Figure shows the position of a particle moving on the x-axis as a function of time. Choose the wrong statement



(1) The particle has come to rest 4 times

(2) The maximum speed is at t = 4 s

(3) The average velocity is zero for t = 2s to t = 6s

(4) Motion of particle is non-uniformly accelerated

116. Which of the following is incorrect about diffraction at a single slit? (symbols have their usual meanings)

(1) If the intensity of central maximum is I, then intensities of Ist, IInd and IIIrd maxima are respectively 4.96%, 1.68% and 0.83% of I

(2) The position of first minima on either side of central maximum is $\pm\frac{\lambda D}{a}$

(3) For diffraction at a single slit, the width of slit must be of the order of wavelength of light used

(4) Width of each fringe in diffraction pattern is given by $\frac{2\lambda D}{a}$

117. A body at rest starts from a point at a distance r (>R) from the center of the Earth. If M and R stand for the mass and the radius of Earth respectively, then the speed of the body when, it reaches the Earth surface is

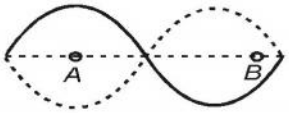
(1) $\sqrt{\frac{2GM}{R}}$

(2) $\sqrt{\frac{2GM}{R-r}}$

(3) $\sqrt{\frac{2GM(r-R)}{Rr}}$

(4) Zero

118. In a standing wave particles at the positions A and B, have a phase difference of



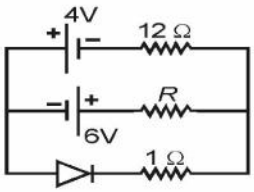
(1) 0

(2) $\frac{\pi}{2}$

(3) $\frac{5\pi}{6}$

(4) π

119. In the given circuit calculate the current through resistance R in the figure (R = 12 Ω)



(1) 0.92 A

(2) 0.13 A

(3) 0.72 A

(4) 0.42 A

120. A ball is projected so as to pass a wall at a distance a from the point of projection at an angle of 45° and falls at a distance b on the other side of the wall. If h is height of wall then

(1) $h = a\sqrt{2}$

(2) $h = b\sqrt{2}$

(3) $h = \frac{\sqrt{2}\,ab}{a+b}$

(4) $h = \frac{ab}{a+b}$

121. Select the incorrect statement regarding the electrostatics of conductors

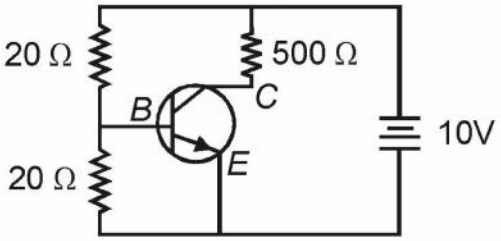
(1) Inside a conductor, electrostatic field is zero

(2) At the surface of a charged conductor, electrostatic field must be normal to the surface at every point

(3) The interior of a conductor can have no excess charge in the static situation

(4) Electrostatic potential is variable throughout the volume of a conductor

122. In the given circuit the current amplification is 20 and the base current is 50×10^{-6} A then the potential drop between the collector emitter junction is



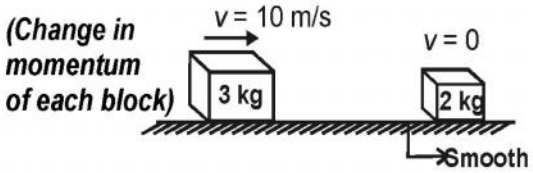
(1) 6 V

(2) 9.5 V

(3) 8 V

(4) 12 V

123. If the two blocks collide head on and stick together, on a frictionless horizontal surface, then the interacting impulse between the two blocks is



(1) 30 Ns

(2) Zero

(3) 18 Ns

(4) 12 Ns

124. An electron revolving in the Bohr's first orbit of hydrogen atom produces magnetic field B at the nucleus. If this electron jumps to second orbit and revolves, then field at the nucleus is

(1) $\frac{B}{2}$

(2) $\frac{B}{8}$

(3) $\frac{B}{16}$

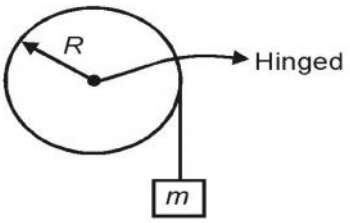
(4) $\frac{B}{32}$

125. Four molecules of a gas have speeds 1, 2, 3 and 4 km/s. The value of the r.m.s. speed of the gas molecules is

(1) $\frac{1}{2}\sqrt{15}$ km/s (2) $\frac{1}{2}\sqrt{10}$ km/s

(3) 2.5 km/s (4) $\sqrt{\frac{15}{2}}$ km/s

126. Calculate the torque acting on the disc in the given arrangement (Radius of disc 1m and mass m)



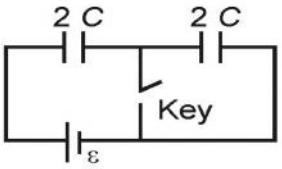
(1) 2 mg/3

(2) mg/3

(3) mg

(4) 4 mg/s

127. Consider the circuit shown in figure. Both capacitors are charged by battery of emf ε. Potential energy stored in system is U_1. Now key is closed. New potential energy stored in system is U_2. Then $\frac{U_1}{U_2}$ is equal to



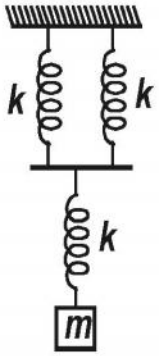
(1) 1

(2) 2

(3) $\frac{1}{4}$

(4) $\frac{1}{2}$

128. A block of mass m hangs from three light springs having same spring constant k. If the mass is slightly displaced vertically, time period of oscillation will be



(1) $2\pi\sqrt{\frac{m}{3k}}$

(2) $2\pi\sqrt{\frac{3m}{2k}}$

(3) $2\pi\sqrt{\frac{2m}{3k}}$

(4) $2\pi\sqrt{\frac{3k}{m}}$

129. A small square loop of wire of side l is placed inside a large circular loop of radius r. The loops are coplanarand their centre coincide. The mutual inductance of the system is proportional is

(1) $\frac{l^2}{r}$

(2) $\frac{l}{r}$

(3) $\frac{r}{l^2}$

(4) lr

130. In a vertical plane p_1 making angle 30° with magnetic meridian, apparent angle of dip is 60°. The apparent angle of dip in vertical plane p_2, which is perpendicular to plane p_1 is

(1) 30°

(2) 45°

(3) $\tan^{-1}(3)$

(4) $\tan^{-1}\left(\frac{1}{3}\right)$

131. The speed of boat is 5 km/h in still water. It crosses a river of width 1 km along shortest possible path in 15 min. The velocity of river water is

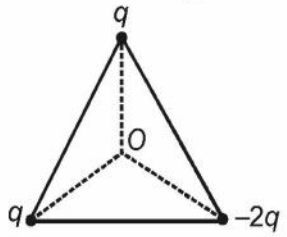
(1) 1 km/h

(2) 3 km/h

(3) 4 km/h

(4) 5 km/h

132. Three point charges are placed at the three corners of an equilateral triangle as shown in figure. The statement which is true for net electric potential V and the net electric field intensity E at the centre of the triangle is



(1) E = 0, V = 0

(2) V = 0, E ≠ 0

(3) V ≠ 0, E = 0

(4) V ≠ 0, E ≠ 0

133. Two spherical soap bubbles of radii r_1 and r_2 in vacuum coalesce under isothermal condition. The resulting bubble has radius R such that

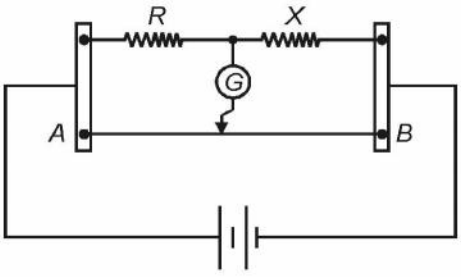
(1) $R = \frac{r_1 + r_2}{2}$

(2) $R = \sqrt{r_1^2 + r_2^2}$

(3) $R = \frac{r_1 - r_2}{2}$

(4) $R = \frac{r_1 r_2}{r_1 - r_2}$

134. In the meter bridge shown, the resistance R has a negative temperature coefficient of resistance. Neglecting the variation in other resistors, when current is passed for some time, in the circuit, balance point should shift towards



(1) A

(2) B

(3) First A then B

(4) It will remain at C

135. As shown in figure, by combining together copper and steel wires of same length and same diameter, a force F is applied at one of their end. The combined length is increased by 2 cm. The wires will have

(1) Same stress and same strain

(2) Different stress and different strain

(3) Different stress and same strain

(4) Same stress and different strain

136. Which of the following gives immediate turbidity with Lucas reagent?

(1) $(CH_3)_3COH$

(2) $(CH_3)_2CHOH$

(3) CH_3CH_2OH

(4) CH_3OH

137. Which among the following represents Incorrect order of first ionization energies?

(1) B < N < C

(2) Li < B < Be < C

(3) O < N < F

(4) Be < N < Ne

138. The species having bond order different from CO is

(1) NO^-

(2) NO^+

(3) CN^-

(4) N_2

139. The EMF of the cell,

$Ni/Ni^{+2}(1M)$ II $Cl^{-1}(0.01M)/Cl_2/Pt$ is _____V, if the SRP of nickel and chlorine electrodes are -0.25V and +1.36V respectively

(1)-1.79V

(2) +1.73V

(3)-1.61V

(4)+1.61V

140. Which of the following on thermal decomposition gives nitrous oxide

(1) NH_4NO_3

(2) $Ba(N_3)_2$

(3) $(NH_4)_2Cr_2O_7$

(4) $NH_4Cl + NaNO_2$

141. Dipole moment is zero for

(1) BF_3

(2) SO_2

(3) H_2O

(4) NF_3

142. For which of the following reactions the graph of $\Delta G^\ominus$ against T is almost horizontal to temperature axis

(1) $2Mg(s) + O_2(g) \rightarrow 2MgO(s)$

(2) $2C(s) + O_2(g) \rightarrow 2CO(g)$

(3) $2CO(g) + O_2(g) \rightarrow 2CO_2(g)$

(4) $C(s) + O_2(g) \rightarrow CO_2(g)$

143. Which of the following is a co – polymer?

(1) Neoprene

(2) Buna-N

(3) Teflon

(4) Polythene

144. Most stable carbanion of the following is:

(1) $H_3C-\overset{\ominus}{C}H-CH_3$

(2) $CH_3-\overset{\ominus}{\underset{\displaystyle CH_3}{\underset{|}{C}}}-CH_3$

(3) $\overset{\ominus}{C}H_3$

(4) $CH_3CH_2\overset{\ominus}{C}H_2$

145. Which of the following is not a d-block element?

(1) Z = 24

(2) Z= 48

(3) Z = 76

(4) Z = 65

146. Pick out the incorrect statements

(1) Bond angle in S_8 molecule is 107^0

(2) Both white phosporous and red phosphorous show chemiluminescence in dark

(3) Tailing of mercury is due to the formation of soluble Hg_2O in Hg

(4) Gelatanous hydrated ferric oxide is used in Arsenic purifier of contact process

147. Ozone layer of stratosphere requires protection from indiscriminate use of which of the following ?

(1) Fungicides and insecticides

(2) Atomic explosions and industrial wastes

(3) Refrigerants and supersonic jets

(4) Meterological balloons and aeroplanes

148. What weight of magnesium metal is deposited on cathode by the same quantity of current that deposited 27grams of silver form $AgNO_3$? (atomic weight of Ag = 108)

(1) 3g

(2) 24g

(3) 6g

(4) 12g

149. The reaction of cyanamide, NH_2CN with dioxygen was carried out in a bomb calorimeter and ΔU was found to be - 742.7 kj mol^{-1} at 298 K. Enthalpy change for the reaction at 298K is

$$NH_2CN\ (s) + 3/2\ O_2\ (g) \rightarrow N_2\ (g) + CO_2\ (g) + H_2O\ (l)$$

(1) - 741.5 kj mol^{-1}

(2) 741.5 kj mol^{-1}

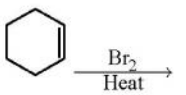
(3) -742.7 kj mol^{-1}

(4) 742.7 kj mol^{-1}

150. Which of the following is not an example of free radical substitution ?

(1) $CH_2 = CH - CH_3 \xrightarrow{NBS}$

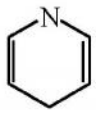
(2) $CH_3CH_2CH_2Cl + KCN \xrightarrow{DMF}$

(3)  $\xrightarrow[Heat]{Br_2}$

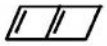
(4) $CH_3 - CH_2 - CH_3 \xrightarrow{Cl_2/hv}$

151. Aromatic species among the following is

(1) 

(2) 

(3) 

(4) 

152. The rate of the reaction, $3A+2B \rightarrow \text{products}$ is given by the rate expression: $\text{Rate}=K[A][B]^2$

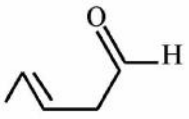
If A is taken in large excess, then the order of the reaction would be:

(1) 3

(2) 2

(3) 1

(4) 5

153. IUPAC name of 

is

(1) 2-pentenal

(2) Pent-2-en-1-al

(3) 3-pentenal

(4) 1-methyl-1-butenal

154. Which of the following is diamagnetic?

(1) $[Fe(CN)_6]^{4-}$

(2) $[Fe(CN)_6]^{3-}$

(3) $[Cr(NH_3)_6]^{3+}$

(4) $[Ni(H_2O)_4]^{2+}$

155. Which transition in Li^{2+} would have the same wavelength as the $2 \rightarrow 4$ transition in He^+ ion?

(1) $4 \rightarrow 2$

(2) $2 \rightarrow 4$

(3) $3 \rightarrow 6$

(4) $6 \rightarrow 2$

156. A water insoluble salt 'X' gave brisk effervescence of CO_2 gas with dil. HCl. It gives brick red colour in flame test. Then the salt is:

(1) Na_2CO_3

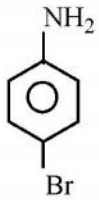
(2) $CaCO_3$

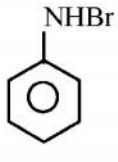
(3) $MgCl_2$

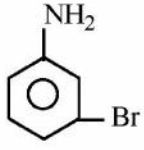
(4) $CaCl_2$

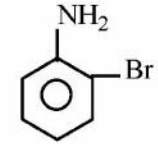
157. Aniline $\xrightarrow{(CH_3CO)_2O} A \xrightarrow[CH_3COOH]{Br_2} B \xrightarrow[(maj)]{H_3O^+} C$.

'C' is

(1) 

(2) 

(3) 

(4) 

158. The solubility of CaF_2 (K_{sp} = 5.3 × 10^{-9}) in 0.1 M solution of NaF would be:

(1) $5.3\times10^{-10}M$

(2) $5.3\times10^{-4}M$

(3) $5.3\times10^{-7}M$

(4) $5.3\times10^{-11}M$

159. The raw materials used in the manufacture of Na_2CO_3 by Solvay process are:

(1) Ammonia, brine and Limestone

(2) Ammonia and Na_2SO_4

(3) Brine and CO

(4) NaCl and Na_2CO_3

160. Which of the following xenon compound has square planar shape?

(1) XeF_4

(2) XeF_2

(3) XeO_4

(4) XeF_6

161. $CH_3CHO \xrightarrow{OH^-} A \xrightarrow{\Delta} B$. **"B" is**

(1) $CH_2=CH-CHO$

(2) $CH_3CH=CHCHO$

(3) $C_6H_5CH=CH-CHO$

(4) $(CH_3)_2C=CHCHO$

162. Which of the following is not artificial sweetner ?

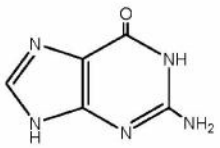
(1) Sucrolose

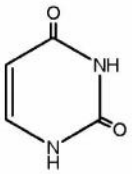
(2) Alitame

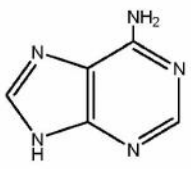
(3) Saccharine

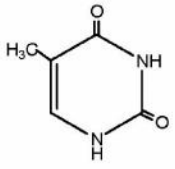
(4) Sucrose

163. The base that is not present in RNA

(1) 

(2) 

(3) 

(4) 

164. The value of Vander wall's constant (a) is minimum for

(1) He

(2) SO_2

(3) NH_3

(4) CO_2

165. The correct order of ionic radii

(1) $La^{3+} < Ce^{3+} < Yb^{3+} < Pm^{3+}$

(2) $Ce^{3+} < Yb^{3+} < Pm^{3+} < La^{3+}$

(3) $La^{3+} < Pm^{3+} < Yb^{3+} < Ce^{3+}$

(4) $Yb^{3+} < Pm^{3+} < Ce^{3+} < La^{3+}$

166. $KMnO_4$ can be prepared from K_2MnO_4 as per the reaction :

$$3MnO_4^{2-} + 2H_2O \rightleftharpoons 2MnO_4^- + MnO_2 + 4OH^-$$

The reaction can go to completion by removing OH^- ions on adding:

(1) NaCl

(2) KOH

(3) CO_2

(4) SO_2

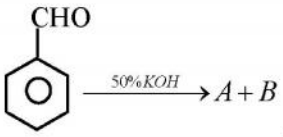
167. Which of the following is most reactive towards SN^1 reaction?

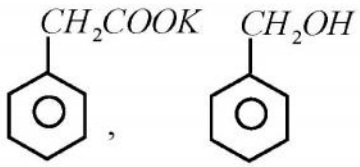
(1) $C_6H_5CH_2Br$

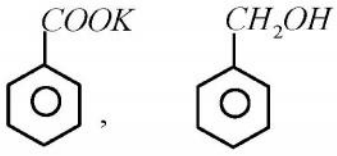
(2) $C_6H_5CH(CH_3)Br$

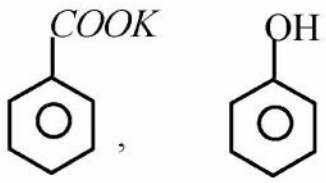
(3) $(C_6H_5)_2CHBr$

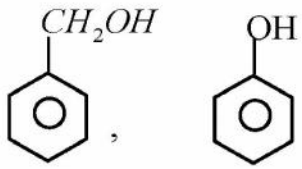
(4) $(CH_3)_2CHBr$

168.  **.Then A and B are:**

(1) 

(2) 

(3) 

(4) 

169. $CH_3-CH=CH_2+HCl \xrightarrow{\text{Peroxide}} A$

(Major product)

$CH_3-CH=CH_2+HCl \longrightarrow B$

(Major product)

Correct statement/s about the above reactions

(1) A and B are identical

(2) Carbocation is formed as intermediate

(3) A and B are position isomers

(4) 1 and 2 are correct

170. $C_6H_5OH + Zn \xrightarrow{\Delta} A$

$B + NaOH \xrightarrow{CaO} A$

A and B in the above reactions are

(1) C_6H_6 and C_6H_5COONa

(2) C_6H_6 and $C_6H_5CH_2OH$

(3) $(C_6H_5)_2$ Zn and C_6H_5COONa

(4) C_6H_6 and $C_6H_5 - O - C_6H_5$

171. **The oxidation number of chromium in CrO_2Cl_2 is**

(1) +2

(2) +6

(3) +5

(4) +3

172. **In which of the following, forward reaction is is favoured with increase of temperature?**

(1) $N_2 + 3H_2 \rightleftharpoons 2NH_3 + 22.9$ K.cal

(2) $N_2 + O_2 \rightleftharpoons 2NO - 42.8$ K.cal

(3) $2SO_2 + O_2 \rightleftharpoons 2SO_3 + 45.3$ K.cal

(4) $H_2 + Cl_2 \rightleftharpoons 2HCl + 44$ K.cal

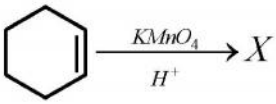
173. **At what temperature RMS velocity of methane becomes equal to that of sulphur dioxide at 600K ?**

(1) 75K

(2) 150K

(3) 300K

(4) 600K

174.  **. "X" is**

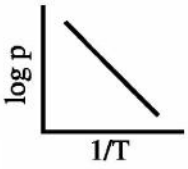
(1) Cyclo hexanone

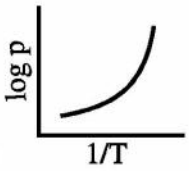
(2) Cyclohexanol

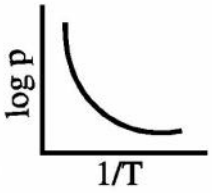
(3) Cyclohexane

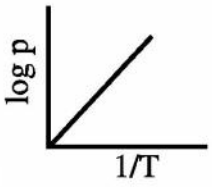
(4) Adipic acid

175. **Which graph of the following represents the graph between log P (on y-axis) and 1/T (on x-axis) p=vapour pressure of liquid, T=absolute temperature**

(1) 

(2) 

(3) 

(4) 

176. The acidic nature of hydrogen in acetylene can not be explained by the reaction with

(1) sodium in liq.NH_3

(2) Ammonical cuprous chloride solution

(3) Ammonical silver nitrate solution

(4) Ozone + H_2O / Zn

177. ***List – I***

I) Acidic nature

II) Reducing nature

III) Boiling points

IV) Volatility

List – II

a) HF> HI > HBr > HCl

b) HI > HBr > HCl > HF

c) HCl > HBr > HI > HF

d) HCl > HF > HBr > HI

The correct match is

	I	II	III	IV
(1)	a	b	c	d
(2)	b	d	a	c
(3)	d	c	a	b
(4)	b	b	a	c

178. H_2O_2 can be prepared by the action of ice cold dil. H_2SO_4 on

(1) MnO_2

(2) PbO_2

(3) Na_2O_2

(4) OF_2

179. Pure benzene freezes at 5.45^0C at a certain place. But a 0.374 m solution of tetrachloroethane in benzene freezes at 3.55^0C. The molar depression constant for benzene is :

(1) 5.08 K. Kg. mol^{-1}

(2) 508 K. Kg. mol^{-1}

(3) 0.508 K. Kg. mol^{-1}

(4) 50.8 K. Kg. mol^{-1}

180. The first order diffraction of X-rays from a certain set of crystal planes occurs at an angle of 11.8° from the planes. If the planes are 0.281 nm apart, the wavelength of X-rays is (sin 11.8° = 0.2045)

(1) 0.215 nm

(2) 0.115 nm

(3) 0.915 nm

(4) 0.195 nm

GURU'S EDUCATIONAL INSTITUTIONS

MANGALAGIRI - GUNTUR- VIJAYAWADA

NEET GRAND TEST – 1, Dt.23-04-2018

SR.INTER / LONG TERM

[Time: 3 Hours] [Max Marks: 720 (180x4)]

BIOLOGY

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

PHYSICS

91) 1	92) 1	93) 4	94) 1	95) 3	96) 4	97) 2	98) 3	99) 1	100) 4
101) 3	102) 1	103) 4	104) 3	105) 1	106) 4	107) 1	108) 2	109) 4	110) 3
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131) 2	132) 2	133) 2	134) 1	135) 4					

CHEMISTRY

136) 1	137) 1	138) 1	139) 2	140) 1	141) 1	142) 4	143) 2	144) 3	145) 4
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156) 2	157) 1	158) 3	159) 1	160) 1	161) 2	162) 4	163) 4	164) 1	165) 4
166) 3	167) 3	168) 2	169) 4	170) 1	171) 2	172) 2	173) 2	174) 4	175) 1
176) 4	177) 4	178) 3	179) 1	180) 2					