

# **MEDICAL**

## **(SAMPLE PAPER )**

**SESSION: 2026-2027**



A-33, 2nd & 3rd Floor Swasthya Vihar, New Delhi-110092

**Space for Rough Work**

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SAMPLE TEST PAPER

# IMPORTANT INSTRUCTIONS

## A. GENERAL INSTRUCTIONS

1. The Test is of **2 hours duration**.
2. The Test Paper consists of 90 Questions. **The Maximum Marks are 360.**
3. The Test Paper consists of five sections - **Section I (Aptitude), Section II (Physics), Section III (Chemistry), Section IV (BOTANY) & Section V (ZOOLOGY).**
4. There are 10 Questions each in Section I and 20 Questions each in Section II, III, IV & V.
5. +4 marks will be given for each correct answer and -1 mark for each wrong answer. In all other cases, no marks will be given.
6. There is only one correct response for each question. Filling up more than one response in each question will be treated as wrong response and marks for wrong response will be deducted accordingly as per instruction 5 above.

## B. HOW TO ANSWER THE QUESTION

1. **Use HB pencil/ Ball Pen (Blue or Black) only to mark your answer in the OMR sheet.**
2. For each question there are multiple choices. One of them is the correct answer.
3. Fill appropriate bubble like this  wherever and not like this   .
4. Mark your response by filling correct option.
5. Please ensure that you fill answer against the correct question number.
6. Use the rough area provided for rough work.

## C. RESTRICTIONS DURING THE TEST

1. Calculators are not allowed in this test.
2. Use of mobile phones in the examination hall is strictly prohibited.
3. Log tables and electronic gadgets in any form are not allowed.
4. No additional sheets will be provided for rough work.

## D. HELPFUL HINTS

1. Work quickly and accurately.
2. If you are not sure of an answer, mark your best choice and avoid wild guessing.

## E. ON COMPLETION OF THE TEST

1. Please ensure your details are properly filled.
2. Handover the test booklet to the invigilator.
3. Ensure that your details are properly filled in the OMR sheet.

## APTITUDE (SECTION - I)

1. If '-' stands for '÷', '÷' stands for '+', '+' stands for '×' and '×' stands for '-', then what is the value of  $18 \div 9 \times 4 + 5 - 10 \div 5$  ?
- (a) 24 (b) 30  
(c) 33 (d) 42
2. In a certain code language if the word 'SOCIAL' is coded as 'TMFEFF', then how will the word 'CENTER' be coded in that language?
- (a) DCQPJX (b) DCQPJL  
(c) DCQXJL (d) DGQXJX
3. Father says to his son: "I am three times as old as I was when you were born". If the current age of son is 40 years, then the current age of father is:
- (a) 90 years (b) 51 years  
(c) 60 years (d) 69 years
4. X can do a piece of work in 6 days and Y can do the same work in 12 days. X and Y together can do the same work in
- (a) 4 days (b) 8 days  
(c) 9 days (d) 6 days
5. M is N's brother. S is D's mother and N's aunt. How is D related to M?
- (a) Sister  
(b) Cousin  
(c) Aunt  
(d) Cannot be determined
6. Three years ago, the average age of the family of 5 members was 17 years. A baby having been born, the average age of the family is the same today. How old is the baby today?
- (a) 4 years (b) 3 years  
(c) 2 years (d) 1 year
7. A monkey climbs 30 feet at the beginning of each hour and rests for a while when he slips back 20 feet before he again starts climbing in the beginning of the next hour. If he begins his ascent at 8.00 am, at what time will he first touch a flag at 120 feet high?
- (a) 8 pm (b) 7 pm  
(c) 6 pm (d) 5 pm
8. A and B start running (from the same point) along the circumference of a circle with speed  $\pi$  m/s and  $3\pi$  m/s respectively. If the radius of the circle is 2m, then after how much time from the start, A & B will meet again
- (a) 1 second (b) 2 seconds  
(c) 3 seconds (d) 4 seconds
9. If  $5 + 3 + 2 = 1501$   
 $9 + 2 + 4 = 1863$   
 $8 + 6 + 3 = 4842$   
 $5 + 4 + 5 = 2052$   
Find  $7 + 2 + 5$
- (a) 1453 (b) 1401  
(c) 1410 (d) 1435
10. There are 25 horses among which you need to find out the fastest horse. You can conduct race among at most 5 to find out their relative speed. At no point you can find out the actual speed of the horse in a race. Find out how many races are required to get the fastest horse.
- (a) 5 (b) 6  
(c) 7 (d) 8

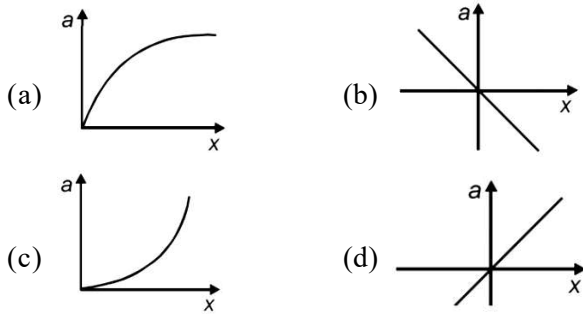
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## PHYSICS (SECTION - II)

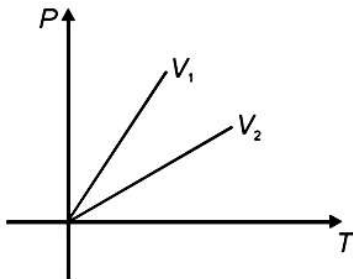
11. The dimensions of latent heat are -

- (a)  $M^0L^2T^{-2}$                       (b)  $M^0L^1T^{-2}$   
 (c)  $M^2L^0T^{-2}$                       (d)  $M^0L^2T^{-2}$

12. The variation of acceleration  $a$  of a particle executing SHM with displacement  $x$  is



13. An ideal gas undergoes two processes at constant volume  $V_1$  and  $V_2$  as shown in pressure temperature (P- T) diagram, then



- (a)  $V_1 = V_2$                       (b)  $V_1 > V_2$   
 (c)  $V_1 < V_2$                       (d)  $V_1 \geq V_2$

14. If  $\lambda_v, \lambda_x$  and  $\lambda_m$  represent the wavelengths of visible light, X-rays and microwaves respectively, then

- (a)  $\lambda_m > \lambda_x > \lambda_v$                       (b)  $\lambda_v > \lambda_m > \lambda_x$   
 (c)  $\lambda_v > \lambda_x > \lambda_m$                       (d)  $\lambda_m > \lambda_v > \lambda_x$

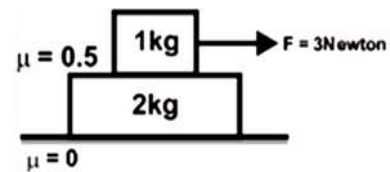
15. The phase difference between electric field and magnetic field in an electromagnetic wave is always

- (a) 0                                      (b)  $\frac{\pi}{4}$   
 (c)  $\frac{\pi}{2}$                                       (d)  $\pi$

16. A particle of mass 0.3 kg is subjected to a force  $F = -kx$  N with  $k = 15$  N/m. What will be its initial acceleration if it is released from a point 20 cm away from the origin?

- (a) 15  $m/s^2$                               (b) 3  $m/s^2$   
 (c) 10  $m/s^2$                               (d) 5  $m/s^2$

17. Two blocks of masses 1 kg and 2 kg are kept on a smooth surface as shown. Coefficient of friction between the blocks is 0.5. If a force of 3 N is applied on 1 kg. Find the magnitude of friction force (in Newtons) between the blocks ( $g = 10$   $m/s^2$ )



- (a) 3 N                                      (b) 2 N  
 (c) 1 N                                      (d) 5 N

18. In the process ABC for an ideal mono-atomic gas, the temperature at states A and C are equal. The heat released in the process BC is Q. The work done in the process A to B is equal to (AB is isobaric and BC is isochoric process) :

- (a) Q                                      (b) Q/2  
 (c) 2Q/3                                      (d) 3Q/2

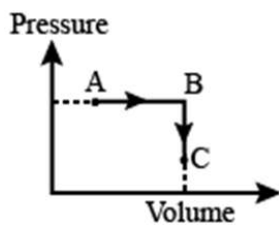
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19. A body moving in a straight line covers a distance of 14 m in 5<sup>th</sup> second and 20 m in 8<sup>th</sup> second. What is its acceleration assuming uniform?

- (a)  $1 \text{ m s}^{-2}$                       (b)  $2 \text{ m s}^{-2}$   
 (c)  $5 \text{ m s}^{-2}$                       (d)  $3 \text{ m s}^{-2}$

20. A ball is thrown in air with some initial speed at an angle to horizontal. It describes parabolic path. Which of the following has same value at the time of throw and time of return?

- (a) Linear momentum  
 (b) Velocity  
 (c) Vertical component of velocity  
 (d) Horizontal component of velocity



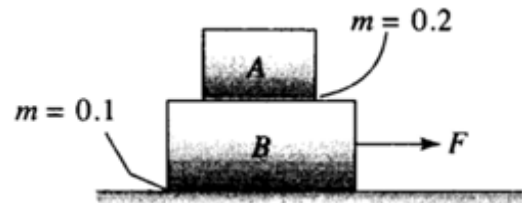
21. The kinetic energy of a body decreases by 19%. What is the percentage decrease in momentum?

- (a) 20%                                  (b) 15%  
 (c) 10%                                  (d) 38%

22. In the displacement of oscillating particle, the equation is  $x = 2 \cos\left(0.5\pi t + \frac{\pi}{3}\right)$ . What is the maximum speed of the particle? ( $x$  in meter,  $t$  in second)

- (a)  $\pi \text{ m s}^{-1}$                               (b)  $2\pi \text{ m s}^{-1}$   
 (c)  $0.5 \text{ m s}^{-1}$                             (d)  $1 \text{ m s}^{-1}$

23. In figure the co-efficient of friction between the floor and the body B is 0.1. The co-efficient of friction between the bodies B and A is 0.2. A force  $F$  is applied as shown on B. The mass of A is  $m/2$  and of B is  $m$ . Which of the following statement is incorrect?



- (a) The bodies will move together if  $F = 0.25 \text{ mg}$ .  
 (b) The body A will slip with respect to B if  $F = 0.5 \text{ mg}$ .  
 (c) The bodies will move together if  $F = 0.5 \text{ mg}$ .  
 (d) The bodies will be at rest if  $F = 0.1 \text{ mg}$ .

24. A particle moves along the  $x$ -axis from  $x = 0$  to  $x = 5$  under the influence of a force given by  $F = 7 - 2x + 3x^2$ . The work done in the process is

- (a) 70 J                                      (b) 270 J  
 (c) 35 J                                      (d) 135 J

25. If a body loses half of its velocity on penetrating 4 cm in a wooden block, then how much will it penetrate more before coming to rest?

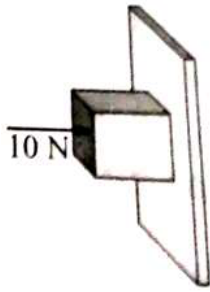
- (a) 1 cm                                      (b) 2 cm  
 (c) 3 cm                                      (d) None of these

26. The periodic time of S.H.M. of amplitude 2 cm is 5 sec. If the amplitude is made 4 cm, its periodic time will be-

- (a) 2.5 s                                      (b) 5 s  
 (c) 10 s                                      (d)  $5\sqrt{2} \text{ s}$

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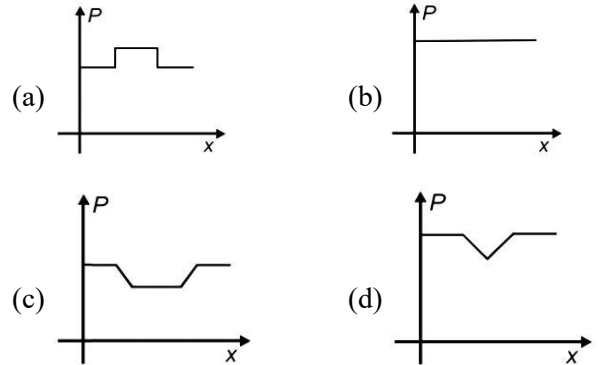
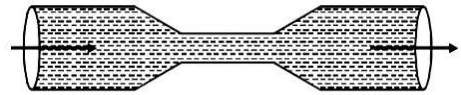
27. A horizontal force of 10 N is necessary to just hold a block stationary against a wall. The coefficient of friction between the block and the wall is 0.1. The weight (in N) of the block is \_\_\_\_\_.



- (a) 3  
(b) 2  
(c) 1  
(d) None of these
28. The radius of a metal sphere at room temperature  $T$  is  $R$ , and the coefficient of linear expansion of the metal is  $\alpha$ . The sphere is heated a little by a temperature  $\Delta T$  so that its new temperature is  $T + \Delta T$ . The increase in the volume of the sphere is approximately

- (a)  $2\pi R \alpha \Delta T$   
(b)  $\pi R^2 \alpha \Delta T$   
(c)  $4\pi R^3 \alpha \Delta T / 3$   
(d)  $4\pi R^3 \alpha \Delta T$

29. Water flows through a frictionless tube with a varying cross-section as shown in figure. Variation of pressure  $P$  at point  $x$  along axis is roughly given by



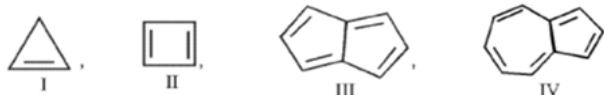
30. The velocity of a body moving in viscous medium is given by  $V = \frac{P}{Q}(1 - e^{-Qt})$  where  $t$  is time;  $P$  and  $Q$  are constants. Then the dimensions of  $P$  are
- (a)  $M^0L^1T^{-2}$   
(b)  $M^0L^2T^{-2}$   
(c)  $M^{-1}L^1T^{-2}$   
(d)  $M^0L^0T^{-2}$

Space for rough work

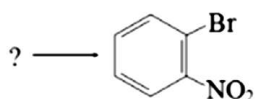


38. The value of Henry's constant  $K_H$  is
- Greater for gases with higher solubility
  - Greater for gases with lower solubility
  - Constant for all gases
  - Not related to the solubility of gases

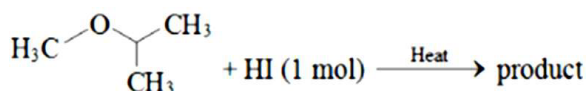
39. The species which are stable at room temperature:



- I and III
  - I and IV
  - II and III
  - III and IV
40. For the reaction, along with  $C_6H_5Br$ , how many different acids are required to complete the following reaction at the place of '?'



- 1
  - 2
  - 3
  - Cannot be determined
41. In the reaction



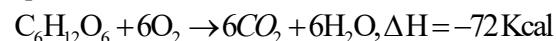
The major products formed is (are)

- $CH_3OH$  and  $(CH_3)_2CHI$
- $CH_3I$  and  $(CH_3)_2CHOH$
- $(CH_3)_2CH-O-CH_2I$
- $CH_3CHI-O-CH_3$

42. Among the following, which has the lowest enthalpy of fusion:

- Fluorine
- Hydrogen
- Chlorine
- Helium

43. Combustion of glucose takes place according to the equation,



Energy required for the production of 1.6 g of glucose is -

(Molecular mass of glucose = 180 g)

- 0.064 kcal
- 0.64 kcal
- 6.4 kcal
- 64 kcal

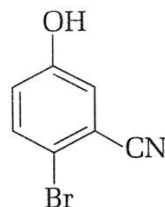
44. When  $H_2SO_3$  is converted into  $H_2SO_4$  the change in the oxidation state of sulfur is from:

- 0 to +2
- +2 to +4
- +4 to +2
- +4 to +6

45.  $R-CH_2CCl_2-R \xrightarrow{\text{Reagent}} R-C \equiv C-R$

- Na
- HCl in  $H_2O$
- KOH in  $C_2H_5OH$
- Zn in alcohol

46. The IUPAC name of the following compound, is



- 4-bromo-3-cyanophenol
- 2-bromo-5-hydroxybenzonitrile
- 2-cyano-4-hydroxybromobenzene
- 6-bromo-3-hydroxybenzonitrile

space for rough work

47. When two liquids A and B are mixed, the boiling point of the mixture become greater than the boiling points of pure liquid A and liquid B. The mixture is:

- (a) Ideal solution
- (b) Non ideal solution with negative deviation from Raoult's Law
- (c) Non ideal solution with positive deviation from Raoult's Law
- (d) Normal solution

48. The first, second and third ionization potentials ( $E_1$ ,  $E_2$  and  $E_3$ ) for an element are 7 eV, 12.5 eV and 142.3 eV respectively. The most stable oxidation state of the element will be

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

44. The number of unpaired electrons in  $[\text{CoF}_6]^{3-}$  are

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

50. Which one of the following is the strongest lewis acid?

- (a)  $\text{BF}_3$
- (b)  $\text{BCl}_3$
- (c)  $\text{BBr}_3$
- (d)  $\text{BI}_3$

*space for rough work*

## BOTANY (SECTION - IV)

51. Which of the following is not true for binomial nomenclature?
- (a) Binomial nomenclature was given by C. Linnaeus  
(b) Biological names are generally in Greek  
(c) First word of biological name represent Genus  
(d) Species epithet of biological name begin with small letter
52. Name the type of aestivation when sepals or petals in a whorl just one another at the margin without overlapping
- (a) Twisted aestivation      (b) Valvate aestivation  
(c) Imbricate aestivation      (d) Vexillary aestivation
53. Which of the following sets of plants have actinomorphic flowers?
- (a) Pea, gulmohur, bean and Cassia  
(b) Mustard, datura and chilli  
(c) Pea, Mustard and Canna  
(d) Cassia, Datura and Canna
54. Kranz anatomy is typical of
- (a) C4 plants      (b) C3 plants  
(c) C2 plants      (d) CAM plants
55. Which of the following is false about Monocot leaves?
- (a) Stomata are present on both the surfaces of epidermis  
(b) Mesophyll is differentiated into spongy and palisade parenchyma  
(c) Parallel venation is found in Monocot leaves  
(d) Leaves are isobilateral
56. What is an eye of potato?
- (a) Axillary bud      (b) Accessory bud  
(c) Adventitious bud      (d) Apical bud
57. The most widely accepted theory of ascent of sap in trees is
- (a) Capillarity  
(b) Role of atmospheric pressure  
(c) Pulsating action of living cell  
(d) Cohesion–tension–transpiration pull model
58. Which of the following is not associated with moss capsule?
- (a) Trabeculae      (b) Peristome  
(c) Columella      (d) Protonema
59. Regeneration of a plant cell to give rise to new plant is called:
- (a) Reproduction      (b) Budding  
(c) Totipotency      (d) Pluripotency
60. Development of fruit without fertilization is called:
- (a) Cell division  
(b) Cell culture  
(c) Parthenocarpy  
(d) Parthenogenesis
61. In the genetic code dictionary, how many codons are used to specify for all the 20 amino acids
- (a) 64      (b) 61  
(c) 20      (d) 16

*space for rough work*

62. If thirty percent of the bases in the sample of DNA extracted from a cell are thymine. What percentage of guanine is present in this DNA?
- (a) 10% (b) 20%  
(c) 40% (d) 30%
63. When favourable conditions return, the encysted Amoeba divides by
- (a) Binary fission  
(b) Multiple fission  
(c) Sexual reproduction  
(d) None of the above
64. Which group shows most extensive metabolic diversity?
- (a) Monera  
(b) Protista  
(c) Plantae  
(d) Animalia
65. Photolysis of water occurs near to
- (a) Photosystem 1  
(b) Photosystem 2  
(c) Xanthophylls  
(d) Carotenoids
66. Earliest scientific classification was given by Aristotle. Aristotle classified animals into
- (a) Prokaryota and Eukaryota  
(b) Those which had red blood & those that did not  
(c) Protozoa and metazoan  
(d) Autotrophic and Heterotrophic.
67. Which of the following statements is correct?
- (a) Ovules are not enclosed by ovary wall in gymnosperms  
(b) Selaginella is heterosporous, while salvinia is homosporous  
(c) Stems are usually unbranched in both cycas and cedrus  
(d) Horsetails are gymnosperms
68. Conversion of glucose to glucose-6-phosphate, the first irreversible reaction of glycolysis, is catalyzed by
- (a) Aldolase (b) Hexokinase  
(c) Enolase (d) Phosphofructokinase
69. The final proof for DNA as the genetic material came from the experiments of
- (a) Griffith  
(b) Hershey and Chase  
(c) Avery, MacLeod and McCarty  
(d) Hargobind Khorana
70. Axile placentation is present in
- (a) Pea, China rose (b) Argemone, Brassica  
(c) Dianthus, Mangifera (d) Lemon, China rose

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## ZOOLOGY (SECTION - III)

71. Which statement regarding the frog is incorrect?
- Vas efferentia from testes open into epididymis/ vas deferens.
  - Ureter in males acts as a urinogenital duct.
  - It has both renal and hepatic portal system.
  - It is ureotelic.
72. Enzymes catalyzing in the link together of two compounds are \_\_\_\_\_.
- Ligases
  - Lyases
  - Hydrolases
  - Isomerases
73. Match the terms given under Column – I with their functions given under Column – II and select the

Column - I			Column - II	
(A)	Lymphatic system	(i)	Carries oxygenated blood	
(B)	Pylmonary vein	(ii)	Immune response	
(C)	Thrombocytes	(iii)	To drain back the tissue fluid to the circulatory system	
(D)	Lymphocytes	(iv)	Coagulation of blood	

Answer from the options given below:

- (A) – (iii), (B) – (i), (C) – (iii), (D) – (iv)
  - (A) – (ii), (B) – (i), (C) – (iii), (D) – (iv)
  - (A) – (ii), (B) – (i), (C) – (iii), (D) – (iv)
  - (A) – (iii), (B) – (i), (C) – (iv), (D) – (ii)
74. Which of the following is not involved in Knee – jerk reflex?
- Interneurons
  - Muscle spindle
  - Brain
  - Motor neuron

75. During agarose gel, electrophoresis DNA fragments move towards the anode. This is because:
- Anode is negatively charged
  - DNA moves in random direction
  - DNA is positively charged molecules
  - DNA is negatively charged molecules
76. Bundles of nerve fibres are enclosed in a sheath called
- Fascicle
  - Endoneurium
  - Epineurium
  - Perineurium
77. Besides bats, echolocation sonar mechanism also occurs in
- Primates
  - Felis (cat)
  - Whales and dolphins
  - Macropus (Kangaroo)
78. Reabsorption of useful substances from glomerular filtrate occurs in
- Proximal convoluted tubule
  - Collecting tube
  - Loop of Henle
  - Distal convoluted tubule
79. Enterocoelom appeared first in the course of evolution in
- Echinodermata
  - Annelida
  - Chordata
  - Aschelminthes

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- 80.** Achilles tendon is associated with
- (a) Gluteus muscle
  - (b) Hamstring muscle
  - (c) Quadriceps muscle
  - (d) Gastrocnemius muscle
- 81.** Meandrina belongs to phylum
- (a) Coelenterata
  - (b) Porifera
  - (c) Arthropoda
  - (d) Ctenophora
- 82.** Which enzyme among the following is used in digestion of proteins?
- (a) Trypsin
  - (b) Amylase
  - (c) Lipase
  - (d) Nuclease
- 83.** Glomerular filtration rate (GFR) in a healthy individual is approximately \_\_\_\_\_ litres per day.
- (a) 2 litres
  - (b) 4.2 litres
  - (c) 180 litres
  - (d) 198 litres
- 84.** Thermoregulation or controlling of body temperature is the function of
- (a) Thalamus
  - (b) Hypothalamus
  - (c) Hippocampus
  - (d) Pons
- 85.** Which hormone acts mainly at the kidney and stimulates reabsorption of water and electrolytes?
- (a) Thyroxine
  - (b) Thymosin
  - (c) Acetylcholine
  - (d) Vasopressin
- 86.** Contractile unit of muscle is part of myofibril between
- (a) Z-line and I-band
  - (b) Z-line and Z-line
  - (c) Z-line and A-band
  - (d) A-band and I-band
- 87.** Which among these is the correct combination of aquatic mammals?
- (a) Seals, Dolphins, Sharks
  - (b) Dolphins, Seals, Trygon
  - (c) Whales, Dolphins, Seals
  - (d) Trygon, Whales, Seals
- 88.** About which day in a normal human menstrual cycle does rapid secretion of LH (Popularly called LH-surged) normally occurs.
- (a) 5<sup>th</sup> day
  - (b) 11<sup>th</sup> day
  - (c) 14<sup>th</sup> day
  - (d) 20<sup>th</sup> day
- 89.** In man and other mammals, air passes from outside into the lungs through
- (a) Nasal cavity, larynx, pharynx, trachea, bronchi, alveoli
  - (b) Nasal cavity, larynx, pharynx, trachea, bronchioles, alveoli
  - (c) Nasal cavity, pharynx, larynx, trachea, bronchioles, bronchi, alveoli
  - (d) Nasal cavity, pharynx, larynx, trachea, bronchi, bronchioles, alveoli
- 90.** The human skull has 22 bones with ..... cranial bones and ..... facial bones
- (a) 10, 12
  - (b) 14, 8
  - (c) 12, 10
  - (d) 8, 14

*Space for rough work*