

# WHIZ SEARCH (SAMPLE PAPER)

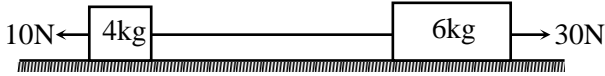
## CLASS – 11<sup>th</sup> [MEDICAL]

### Important Instructions:

- This paper contains 45 questions among 4 Sections (Physics, Chemistry, Biology and Mental ability & Reasoning).
- All questions are compulsory.
- Section (Physics, Chemistry and Biology) contains 10 questions each.
- Section (Mental ability & Reasoning) contains 15 questions only.
- Each question is allotted **4 marks for correct response**.
- **1 mark will be deducted** for marking incorrect or multiple responses.
- No deduction will be made from total marks for unattempted questions.
- For each question, there is **only 1 correct** response.

**#SECTION# PHYSICS**  
**#PART# SECTION (Maximum Marks: 40)**

(1.) In the situation shown in figure, the tension in the string connecting the two blocks will be (string is massless and frictional force is negligible)



- (a.) 20 N
- (b.) 25 N
- (c.) 10 N
- (d.) 18 N

Ans: D  
 Exp:

(2.) A body covers one-third of the distance with a speed  $v_1$ , the second one-third of the distance with a speed  $v_2$  and the remaining distance with a speed  $v_3$ . The average speed is

- (a.)  $\frac{v_1 + v_2 + v_3}{3}$
- (b.)  $\frac{3v_1v_2v_3}{v_1v_2 + v_2v_3 + v_3v_1}$
- (c.)  $\frac{v_1v_2 + v_2v_3 + v_3v_1}{3}$
- (d.)  $\frac{v_1v_2v_3}{3}$

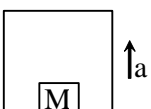
Ans: B  
 Exp:

(3.) The velocity of projection of a particle if it does not rise more than 3 m in a range of 600 m is

- (a.) 400 m/s
- (b.) 273 m/s
- (c.) 343 m/s
- (d.) 3.83 m/s

Ans: A  
 Exp:

(4.) With what acceleration 'a' should the box of figure moves up so that the block of mass M exerts a force  $7Mg/4$  on the floor of the box?



- (a.)  $g/4$
- (b.)  $g/2$

- (c.)  $3g/4$
- (d.)  $4g$

Ans: C

Exp:

- (5.) How much work must be done by a force on 100 kg body to accelerate it from 0 to 20 m/s in 20 s?
- (a.)  $2 \times 10^3$  W
  - (b.)  $2 \times 10^3$  J
  - (c.)  $2 \times 10^4$  J
  - (d.)  $4 \times 10^4$  J

Ans: C

Exp:

- (6.) A sphere of mass  $m$  moving with a constant velocity  $u$  hits another stationary sphere of same mass. If  $e$  is the coefficient of restitution, the ratio of velocities of two spheres after collision is

- (a.)  $\frac{1-e}{1+e}$
- (b.)  $\frac{1+e}{e}$
- (c.)  $\frac{e+1}{e-1}$
- (d.)  $\frac{e-1}{e+1}$

Ans: A

Exp:

- (7.) If moment of Inertia of a solid sphere about any axis passing through its center is  $I$ . Then find the moment of inertia of solid sphere about any tangent.

- (a.)  $\frac{7}{2}I$
- (b.)  $\frac{2}{5}I$
- (c.)  $\frac{2}{7}I$
- (d.)  $\frac{5}{2}I$

Ans: A

Exp:

- (8.) The orbital speed of Jupiter is
- (a.) greater than the orbital speed of earth
  - (b.) less than the orbital speed of earth
  - (c.) equal to the orbital speed of earth
  - (d.) zero

Ans: B

Exp:

(9.) A wire can be broken by applying a load of 20 kg wt. The force required to break the wire of twice the diameter is

- (a.) 20 kg wt
- (b.) 5 kg wt
- (c.) 80 kg wt
- (d.) 160 kg wt

Ans: C

Exp:

(10.) A cubical block of wood of specific gravity 0.5 and chunk of concrete of specific gravity 2.5 are fastened together. The ratio of the mass of wood to the mass of concrete which makes the combination to float with its entire volume submerged under water is

- (a.)  $\frac{3}{5}$
- (b.)  $\frac{4}{5}$
- (c.)  $\frac{3}{7}$
- (d.)  $\frac{2}{7}$

Ans: A

Exp:

## #SECTION# CHEMISTRY

### #PART# SECTION (Maximum Marks: 40)

(11.) In the given reversible reaction  $\text{PCl}_5 \rightleftharpoons \text{PCl}_3 + \text{Cl}_2$  According to Le-chatitier's principle if we increase the pressure of the reversible system then :

- (a.) Concentration of all will increase
- (b.) Concentration of all will decrease
- (c.) Concentration of  $\text{PCl}_3$  will decrease
- (d.) Concentration of  $\text{PCl}_5$  will decrease

Ans: A

Exp:

(12.) The oxidation number of sulphur(s) in  $\text{Na}_2\text{S}_2\text{O}_3$  is :

- (a.) 2
- (b.) 0, + 4
- (c.) -2, + 6
- (d.) 3, 3

Ans: C

Exp:

(13.) In nature of  $\pi$ -bond in the compound  $\text{XeOF}_4$  is

- (a.)  $3d_{\pi} - 2p_{\pi}$
- (b.)  $5d_{\pi} - 2p_{\pi}$
- (c.)  $4d_{\pi} - 2p_{\pi}$
- (d.)  $4d_{\pi} - 3p_{\pi}$

Ans: C

Exp:

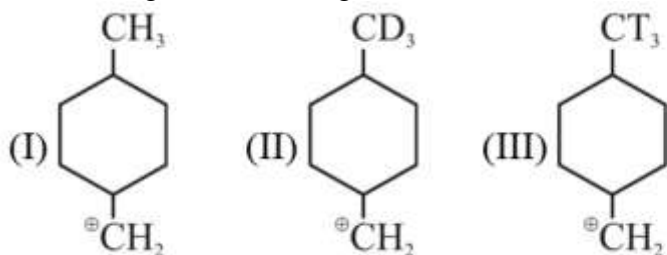
(14.) According to Bohr's model of hydrogen atom the electric current generated due to motion of electron in  $n^{\text{th}}$  orbit is :

- (a.)  $\frac{4\pi^2 m k^2 e^4}{n^2 h^2}$
- (b.)  $\frac{4\pi^2 m k^2 e^5}{n^2 h^2}$
- (c.)  $\frac{n^2 h^2}{4\pi^2 m k^2 e^5}$
- (d.)  $\frac{4\pi^2 m k^2 e^5}{n^3 h^3}$

Ans: D

Exp:

(15.) Arrange the following in the correct order of their stability.



- (a.)  $I = II = III$
- (b.)  $III > II > I$
- (c.)  $I > II > III$
- (d.)  $I > III > II$

Ans: B

Exp:

(16.) The correct order of solubility of sulphates of alkaline earth metals are

- (a.)  $\text{BeSO}_4 > \text{MgSO}_4 > \text{SrSO}_4 > \text{CaSO}_4$
- (b.)  $\text{BeSO}_4 > \text{MgSO}_4 > \text{CaSO}_4 > \text{SrSO}_4$
- (c.)  $\text{BeSO}_4 > \text{MgSO}_4 < \text{CaSO}_4 < \text{SrSO}_4$
- (d.)  $\text{MgSO}_4 < \text{CaSO}_4 < \text{SrSO}_4 > \text{BeSO}_4$

Ans: B

Exp:

(17.) The percentage of degree of dissociation of 0.033 M  $\text{NH}_4\text{OH}$  at  $25^\circ\text{C}$  in a solution of  $\text{pH} = 11$  is

- \_\_\_\_\_.
- (a.) 3%
  - (b.) 100%
  - (c.) 20%
  - (d.) 6%

Ans: C

Exp:

(18.) Match the column:

Column – I		Column – II	
P	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10 \text{H}_2\text{O}$	1	-O- linkage present
Q	$\text{S}_2\text{O}_8^{2-}$	2	-O-O- linkage present
R	$\text{B}_2\text{H}_6$	3	$3c - 4e^-$ bond present
S	$\text{Al}_2\text{Cl}_6$	4	$3c - 2e^-$ bond present

- (a.) P-2, Q-1, R- 4, S-3
- (b.) P-1, Q-2, R- 4, S-3
- (c.) P-1, Q-2, R- 3, S-4
- (d.) P-2, Q-1, R- 3, S-4

Ans: B

Exp:

(19.) Two glass bulb A and B are connected by a very small tube (of negligible volume) having stop cock. Bulb A has a volume of  $100 \text{ cm}^3$  and contains certain gas while bulb B is empty. On opening the stop cock, the pressure in 'A' fell down by 60%. The volume of bulb B must be

- (a.) 200 mL
- (b.) 150 mL
- (c.) 250 mL
- (d.) 100 mL

Ans: B

Exp:

(20.) Which one of the following pairs of elements has the second element with greater first ionization energy?

- (a.) P, As
- (b.) Si, Ge
- (c.) Al, Ga
- (d.) S, Se

Ans: C

Exp:

**#SECTION# BIOLOGY**  
**#PART# SECTION (Maximum Marks: 40)**

- (21.) In bacteria, plasmid is
- (a.) Extra chromosomal material
  - (b.) Main DNA
  - (c.) Non-functional DNA
  - (d.) Repetitive gene

Ans: A

Exp:

- (22.) The sexual reproduction is absent in
- (a.) Spirogyra
  - (b.) Nostoc
  - (c.) Ulothrix
  - (d.) Volvox

Ans: B

Exp:

- (23.) Which one of the following is not a characteristic of phylum Annelida?
- (a.) Pseudocoelom
  - (b.) Ventral nerve cord
  - (c.) Closed circulatory system
  - (d.) Segmentation

Ans: A

Exp:

- (24.) An example of edible underground stem is
- (a.) Carrot
  - (b.) Groundnut
  - (c.) Sweet potato
  - (d.) Potato

Ans: D

Exp:

- (25.) Which of the following structure is not found in a prokaryotic cell?
- (a.) Mesosome
  - (b.) Plasma membrane
  - (c.) Nuclear envelope
  - (d.) Ribosome

Ans: C

Exp:

- (26.) Emulsification of fat is carried out by
- (a.) Bile pigments
  - (b.) Bile salts
  - (c.) HCl
  - (d.) Pancreatic juice

Ans: B

Exp:

(27.) Lungs are enclosed in

- (a.) Periosteum
- (b.) Perichondrium
- (c.) Pericardium
- (d.) Pleural membrane

Ans: D

Exp:

(28.) 'Bundle of His' is a part of which one of the following organs in humans?

- (a.) Brain
- (b.) Heart
- (c.) Kidney
- (d.) Pancreas

Ans: B

Exp:

(29.) In ureotelic animals, urea is formed by

- (a.) Krebs cycle
- (b.) EM pathway
- (c.) Ornithine cycle
- (d.) Cori's cycle

Ans: C

Exp:

(30.) Intercostal muscles occur in

- (a.) Abdomen
- (b.) Thigh
- (c.) Ribs
- (d.) Diaphragm

Ans: C

Exp:

## #SECTION# MENTAL ABILITY & REASONING

### #PART# SECTION 1 (Maximum Marks: 60)

(31.) How many quadrilaterals are there in the following figure?



- (a.) 11
- (b.) 8
- (c.) 2
- (d.) 4



Ans: A

Exp:

(32.) Find the wrong term 9, 11, 15, 23, 39, 70, 135

(a.) 23

(b.) 39

(c.) 70

(d.) 135

Ans: C

Exp:

(33.) A watch reads 4 : 30. If the minute - hand points to East, in which direction does the hour-hand point ?

(a.) North-East

(b.) South-East

(c.) North-West

(d.) North

Ans: A

Exp:

(34.) The time in the clock is 4 : 46, what is the mirror image ?

(a.) 7 : 24

(b.) 7 : 14

(c.) 7 : 14

(d.) 7 : 24

Ans: B

Exp:

(35.) Neelam, who is Rohit's daughter, says to Indu, "Your mother Reeta is the younger sister of my father, who is the third child of Sohanji. " How is Sohanji related to Indu ?

(a.) Maternal-uncle

(b.) Grandfather

(c.) Father

(d.) Father-in-law

Ans: B

Exp:

(36.) If the seventh day of month is three days earlier than Friday, what day will it be one the nineteenth day of the month ?

(a.) Sunday

(b.) Monday

(c.) Wednesday

(d.) Friday

Ans: A

Exp:

(37.) Sum of the Proper divisors of 100.

- (a.) 217
- (b.) 216
- (c.) 116
- (d.) 117

Ans: B

Exp:

(38.) Sanjay went 70 metres in the East before turning to his right. He went 10 metres before turning to his right again and went 10 metres from this point. From here he went 90 metres to the North. How far was he from the starting point?

- (a.) 80 metres
- (b.) 100 metres
- (c.) 140 metres
- (d.) 260 metres

Ans: B

Exp:

(39.) If **RAT** = 42 and **CAT** = 57, then **LATE** = ?

- (a.) 60
- (b.) 70
- (c.) 64
- (d.) 74

Ans: B

Exp:

(40.) Which sequence of letter when placed at the blanks one after the other will complete the given letter series ?

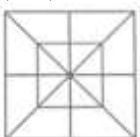
abc\_d\_bc\_d\_db\_cda

- (a.) bacdc
- (b.) cdabc
- (c.) dacab
- (d.) dccbd

Ans: C

Exp:

(41.) Count the number of triangles and squares in the following figure ?



- (a.) 28 triangles, 10 squares
- (b.) 28 triangles, 8 squares
- (c.) 32 triangles, 10 squares
- (d.) 32 triangles, 8 squares.

Ans: C

Exp:

(42.) Six friends are sitting around a circular table at equal distances from each other. Ramola is sitting two places right of Komolika who is exactly opposite to Anu. Anu is sitting on the immediate left of Pallavi, who is exactly opposite to Mandira, natasha is also sitting at the table.

Which of the following statements is not correct ?

- (a.) Natasha and Ramola are exactly opposite to each other.
- (b.) Mandira and Natasha are at equal distance from Komolika.
- (c.) Angle subtended by Manidra and Natasha is same at the angle subtended by Ramola and Pallavi at the centre of the table.
- (d.) Natasha is on the immediate left of Pallavi.

Ans: D

Exp:

(43.) Three persons **A**, **B** and **C** are Standing in a queue. There are five persons between **A** and **B** and eight persons between **B** and **C**. If there be three persons ahead of **C** and **21** persons behind **A**, what could be the minimum number of persons in the queue.

- (a.) 41
- (b.) 40
- (c.) 28
- (d.) 27

Ans: C

Exp:

(44.) Find the Odd one Out:

- (a.)  $9 - 27$
- (b.)  $15 - 45$
- (c.)  $10 - 30$
- (d.)  $20 - 60$

Ans: A

Exp:

(45.) It being given that :  $>$  denotes  $+$ ,  $<$  denotes  $-$ ,  $\div$  denotes  $\div$ ,  $=$  denotes  $=$ ,  $\leq$  denotes 'less than' and  $\times$  denotes 'greater than', find which of the following is a correct statement.

- (a.)  $3 + 2 < 4 = 9 + 3 < 1$
- (b.)  $3 > 2 > 4 = 18 + 3 < 2$
- (c.)  $3 > 2 < 4 \times 8 + 4 < 2$
- (d.)  $3 + 2 < 4 \times 9 + 3 < 3$

Ans: C  
Exp: