

WISDOM WORLD SCHOOL, KURUKSHETRA

Wisdom Scholarship-cum-Admission Test (WSAT)

for

Admission to Grade 11 (UDAAN Batch)

Date of Examination : 15 January 2023 (Sunday)

PATTERN OF EXAMINATION

- Multiple choice, single correct option type questions
- Negative Marking for Physics, Chemistry, Mathematics and Biology with each correct answer carrying four marks and each wrong answer carrying one negative mark to be deducted.
- No negative marking for Reasoning Test; each question carries one mark.

| Sr. No. | Grade 11 | Physics | Chemistry | Maths | Biology | Reasoning | Total Questions |
|---------|-------------|---------|-----------|-------|---------|-----------|-----------------|
| 1 | Non Medical | 20 | 20 | 40 | - | 20 | 100 |
| 2. | Medical | 20 | 20 | 10 | 30 | 20 | 100 |

SYLLABUS FOR WSAT

| SUBJECT | SYLLABUS |
|----------------------------|---|
| PHYSICS | Electricity, Light-Reflection and Refraction, Magnetic Effect of Electric Current |
| CHEMISTRY | Chemical Reactions & Equations, Acids, Bases & Salts, Metals & Non Metals, Carbon and its Compound |
| BIOLOGY | Life Processes: Nutrition, Excretion, Respiration, Transportation, Control and Coordination, Heredity. |
| MATHEMATICS | Real Numbers, Polynomials, Pair of Linear Equations in two variables, Coordinate Geometry, Quadratic Equations, Arithmetic Progression, Introduction to Trigonometry & Application of Trigonometry, Triangles: Similarity, Surface Area and Volume, Probability |
| MENTAL ABILITY TEST | Verbal : Number Series, Alphabet Test, Coding-Decoding, Blood Relation, Number Ranking, Calendar, Reasoning Puzzle Non-Verbal : Counting figures, Missing and Inserting Character, Dice |

WISDOM SCHOLASTIC APTITUDE TEST (WSAT)

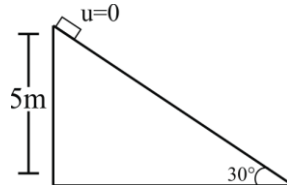
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NEET ASPIRANTS

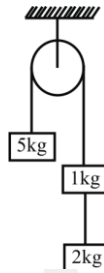
Sample Question Paper

PHYSICS

1. The time taken by the object to slide down the incline is

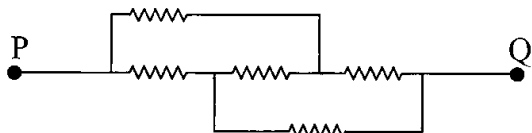


- (a) 2 sec (b) 1 sec (c) 1.5 sec (d) None of these
2. The tension in the string connecting the blocks 1 kg and 2 kg is ($g = 10 \text{ m/s}^2$)

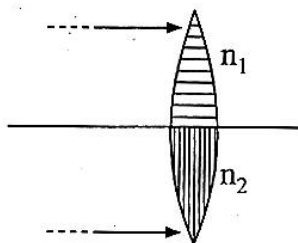


- (a) 25 N (b) 20 N (c) 15 N (d) 10 N
3. A car running with a velocity 72 kmph on a level road, is stopped after travelling a distance of 30 m after disengaging its engine ($g=10 \text{ ms}^{-2}$). The coefficient of friction between the road and the tyres is
- (a) 0.33 (b) 4.5 (c) 0.67 (d) 0.8
4. A point object is placed at a distance of 12 cm from a convex lens on its principal axis. Its image is formed on the other side of the lens at a distance of 18 cm from the lens. Find the focal length of the lens.
- (a) 5.4 cm (b) 7.2 cm (c) 6.8 cm (d) 10 cm
5. A box of mass 20 kg is pushed along a rough floor with a velocity 2 m/s and then let go. The box moves 5m on the floor before coming to rest. What must be the frictional force acting on the box?
- (a) 4 N (b) 2 N (c) 20 N (d) 8 N
6. Two different wires have resistivity lengths, area of cross-sections are in the ratio 4:3, 9:2 and 27:8. Then the ratio of resistance of two wires is
- (a) $\frac{16}{9}$ (b) $\frac{9}{16}$ (c) $\frac{8}{27}$ (d) $\frac{27}{8}$
7. The color at sky appears blue due to
- (a) Dispersion of light (b) Scattering of light
(c) Atmospheric Retraction (d) Reflection of light
8. In dispersion of light, which color travels fastest in prism?
- (a) Yellow (b) Violet (c) Red (d) Orange

9. Figure shows five equal resistances of value r . The effective resistance between P and Q is.



- (a) $\frac{3r}{2}$ (b) r (c) $5r$ (d) $\frac{r}{5}$
10. A convex lens is made of two different materials as shown in the figure. A beam of light is coming from ∞ as shown. Which of the following is true



- (a) Two images are formed
 (b) Continuous image is formed between focal point of lower lens and infinity
 (c) One image is formed
 (d) No image is formed

(CHEMISTRY)

11. When the gases sulphur dioxide and hydrogen sulphide mix in the reaction $\text{SO}_2 + 2\text{H}_2\text{S} \rightarrow 2\text{H}_2\text{O} + 3\text{S}$ occurs. Here hydrogen sulphide is acting as
- (a) an oxidizing agent (b) a reducing agent
 (c) a dehydrating agent (d) a catalyst
12. The equation: $\text{Na}_2\text{CO}_3 + x\text{HCl} \rightarrow 2\text{NaCl} + \text{CO}_2 + \text{H}_2\text{O}$ the value of x is
- (a) 1 (b) 2 (c) 3 (d) 4
13. Which of the following is acidic in nature?
- (a) Lime juice (b) Human blood (c) Lime water (d) Antacid
14. Which of the following can undergo a chemical reaction?
- (a) $\text{MgSO}_4 + \text{Fe}$ (b) $\text{MgSO}_4 + \text{Pb}$ (c) $\text{ZnSO}_4 + \text{Fe}$ (d) $\text{CuSO}_4 + \text{Fe}$
15. Which of the following contains maximum number of molecules?
- (a) 1g CO_2 (b) 1g N_2 (c) 1g H_2 (d) 1g CH_4
16. A solution is having pH 5. It will turn blue litmus to
- (a) Red (b) Does not effect (c) Green (d) Both (a) and (c)
17. Which of the following statements about the given reaction are correct?
 $3\text{Fe} (\text{s}) + 4\text{H}_2\text{O} (\text{g}) \rightarrow \text{Fe}_3\text{O}_4 (\text{s}) + 4 \text{H}_2 (\text{g})$
- (i) Iron metal is getting oxidised (ii) Water is getting reduced
 (iii) Water is acting as reducing agent (iv) Water is acting as oxidising agent
- (a) (i), (ii) and (iii) (b) (ii) and (iv) (c) (i), (ii) and (iv) (d) (ii) and (iv)

18. Three beakers labelled as A, B and C each containing 25 ml of water were taken. A small amount of NaOH, anhydrous CuSO_4 and NaCl were added to the beakers A, B and C respectively. It was observed that there was an increase in the temperature of the solution contained in beakers A and B, whereas in case of beaker C, the temperature of the solution falls. Which one of the following statement(s) is (are) correct?
- (i) In beakers A and B, exothermic process has occurred.
(ii) In beakers A and B, endothermic process has occurred.
(iii) In beaker C exothermic process has occurred.
(iv) In beaker C endothermic process has occurred.
- (a) (i) only (b) (ii) only (c) (i) and (iv) (d) (iv), (ii) and (iii)
19. The number of protons present in a sulphur S^{2-} ion
- (a) 16 (b) 14 (c) 18 (d) None of these
20. In Gold Smith aluminothermic process, reducing agent is:
- (a) coke (b) sodium (c) aluminium powder (d) alumina

BIOLOGY

21. The common translocated form in plants of carbohydrate is
- (a) Glucose (b) Sucrose (c) Starch (d) Glycogen
22. Oxygen released during photosynthesis comes from:
- (a) Water (b) Carbon dioxide (c) Chloroplast (d) Chlorophyll
23. Transpiration is a useful process as it involved in
- (a) Loss of water
(b) Food translocation
(c) Ascent of water and minerals and reduce the impact of temperature on plants.
(d) Growth and curvature of plants.
24. Statements A, B, C and D.
- I. The digestion of starch (carbohydrate) begins in the buccal cavity by ptyalin enzyme.
II. Protein digestion begins in the stomach.
III. Gastric lipase enzyme completely breaks down the lipids.
IV. Hydrochloric acid, proteins digesting enzymes and mucus are present in the gastric juice.
- The correct and wrong statements are given in***
- (a) I, III and IV are correct; while B is wrong (b) I, II and IV are correct; while III is wrong
(c) II, III and IV are correct; while A is wrong (d) I, II and III are correct; while IV is wrong
25. The trans-face of Golgi apparatus is also called _____.
- (a) maturing face (b) forming face (c) transfer face (d) none of the above.
26. The instrument measuring blood pressure is
- (a) Stethoscope (b) Electrocardiograph
(c) Electroencephalograph (d) Sphygmomanometer
27. In which of the following cells lysosomes are absent?
- (a) Animal cells (b) Erythrocytes (c) Hepatocytes (d) Muscle cells

28. The area of maximum reabsorption in a renal tubule occurs at
 (a) DCT (b) PCT (c) Henle's loop (d) Glomerulus
29. The opening of aorta is guarded by:
 (a) Tricuspid valve (b) Mitral valve (c) Semilunar valve (d) Bicuspid valve
30. The proteins digesting enzyme in stomach which degrades milk proteins:
 (a) Pepsin (b) Trypsin (c) Ptyalin (d) Rennin
31. Life span of RBC is
 (a) 120 days (b) 80 days (c) 40 days (d) 1 week
32. What is / are the functions of SER?
 (a) Synthesis of lipids (b) Carbohydrate metabolism
 (c) Detoxification of drugs (d) All of the above
33. Ribosomes are made up of _____.
 (a) DNA and proteins (b) DNA alone
 (c) RNA and proteins (d) RNA and DNA
34. The 3 'RRR' represents:
 (a) Reduce, Reuse, Recycle (b) Reduce, Reuse, Reproduce
 (c) Reduce, Retain, Recycle (d) None of these
35. The pacemaker of the heart is
 (a) AV node (b) SA node (c) Bundle of His (d) Purkinje fibres

MATHEMATICS

36. If one root of the polynomial $f(x) = 5x^2 + 13x + k$ is reciprocal of the other, then the value of k is :
 (a) 0 (b) 5 (c) $\frac{1}{6}$ (d) 6
37. The value of k for which the system of equations: $kx - y = 2$, $6x - 2y = 3$, has a unique solution, is
 (a) = 3 (b) $\neq 3$ (c) $\neq 0$ (d) = 0
38. If $\tan \theta = \frac{a}{b}$, then $\frac{a \sin \theta + b \cos \theta}{a \sin \theta - b \cos \theta}$ is equal to
 (a) $\frac{a^2 + b^2}{a^2 - b^2}$ (b) $\frac{a^2 - b^2}{a^2 + b^2}$ (c) $\frac{a + b}{a - b}$ (d) $\frac{a - b}{a + b}$
39. In an AP, if $a = 1$, $a_n = 20$ and $S_n = 399$, then n is
 (a) 19 (b) 21 (c) 38 (d) 42
40. The probability of getting 53 sundays in a leap year is:
 (a) $\frac{7}{365}$ (b) $\frac{53}{365}$ (c) $\frac{2}{7}$ (d) $\frac{1}{7}$

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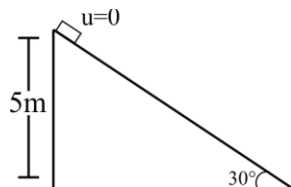
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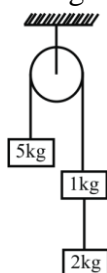
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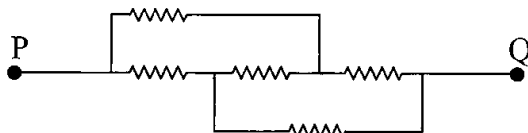


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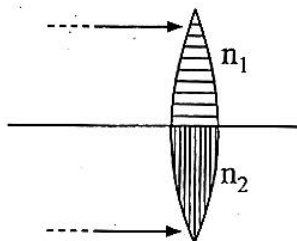


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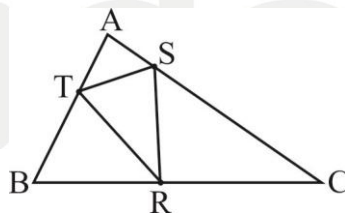
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(MATHEMATICS)

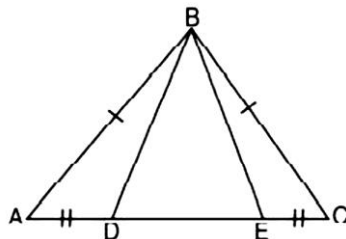
21. If one root of the polynomial $f(x) = 5x^2 + 13x + k$ is reciprocal of the other, then the value of k is :
- (a) 0 (b) 5 (c) $\frac{1}{6}$ (d) 6

22. In $\triangle ABC$, $BR = RC$, $CS = 3SA$ and $\frac{AT}{TB} = \frac{p}{q}$. If area of $\triangle RST$ is twice the area of $\triangle TBR$, then $\frac{p}{q}$ is equal to



- (a) $\frac{2}{1}$ (b) $\frac{8}{3}$ (c) $\frac{5}{2}$ (d) $\frac{7}{3}$

23. It is given that $AB = BC$ and $AD = EC$. The $\triangle ABE \cong \triangle CBD$ by ---- congruency.

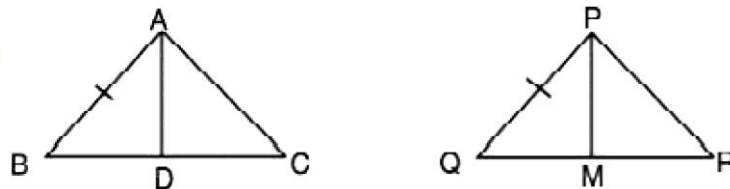


- (a) SSS (b) ASA (c) SAS (d) AAS

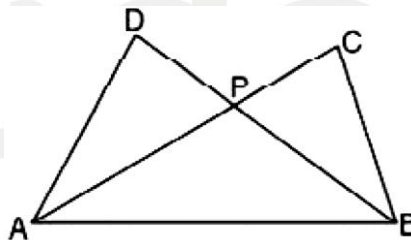
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25. If $\tan \theta = \frac{a}{b}$, then $\frac{a \sin \theta + b \cos \theta}{a \sin \theta - b \cos \theta}$ is equal to
 (a) $\frac{a^2 + b^2}{a^2 - b^2}$ (b) $\frac{a^2 - b^2}{a^2 + b^2}$ (c) $\frac{a + b}{a - b}$ (d) $\frac{a - b}{a + b}$
26. The value of $(1 + \cot \theta - \operatorname{cosec} \theta)(1 + \tan \theta + \sec \theta)$ is
 (a) 1 (b) 2 (c) 4 (d) 0
27. If the centroid of the triangle formed by the points (a, b), (b, c) and (c, a) is at the origin, then $a^3 + b^3 + c^3 =$
 (a) abc (b) 0 (c) a + b + c (d) 3 abc
28. If $x^n - y^n$ is divisible by $x - y$ then x must be
 (a) Natural Number (b) Integer (c) Whole Number (d) None of these

29. In the given figure, two sides AB and BC and the median AD drawn to side BC of $\triangle ABC$ are equal to the sides PQ and QR and the corresponding median PM of the other $\triangle PQR$. Which of the following is not correct?



- (a) $\triangle ABD \cong \triangle PQM$ (b) $\triangle ABC \cong \triangle PQR$ (c) $\triangle ABD \cong \triangle PMR$ (d) $\triangle ADC \cong \triangle PMR$
30. In the given figure, $AD = BC$, $AC = BD$. Then $\triangle PAB$ is



- (a) equilateral (b) right angled (c) scalene (d) isosceles
31. The area of triangle is 5 and two of its vertices are (2, 1) and (3, -2). If the third vertex lie on $y = x + 3$, then its coordinates will be
 (a) $\left(\frac{7}{2}, \frac{13}{2}\right)$ (b) $\left(\frac{-7}{2}, \frac{-1}{2}\right)$ (c) $\left(\frac{5}{2}, \frac{11}{2}\right)$ (d) $\left(\frac{-5}{2}, \frac{1}{2}\right)$
32. A circus tent is cylindrical upto a height of 3 m and conical above it. If the diameter of the base is 105 m and the slant height of the conical part is 53 m, find the total canvas used in the making the tent?
 (a) 9735 m^2 (b) 9537 m^2 (c) 9537 m^2 (d) 9753 m^2

33. A heavy sphere of maximum possible volume is to be completely immersed into a cylindrical jar of radius a containing water upto to a height $2a$. The minimum height of the jar so that no water spills out of it is:
- (a) $\frac{10a}{3}$ (b) $\frac{11a}{3}$ (c) $\frac{12a}{3}$ (d) $\frac{13a}{3}$
34. In an AP , if $a = 1$, $a_n = 20$ and $S_n = 399$, then n is
- (a) 19 (b) 21 (c) 38 (d) 42
35. If one of the zeroes of a quadratic polynomial of the form $x^2 + ax + b$ is the negative of the other, then it
- (a) has no linear term and the constant term is negative
 (b) has no linear term and the constant term is positive
 (c) can have a linear term but the constant term is negative
 (d) can have a linear term but the constant term is positive
36. The probability of getting 53 sundays in a leap year is:
- (a) $\frac{7}{365}$ (b) $\frac{53}{365}$ (c) $\frac{2}{7}$ (d) $\frac{1}{7}$
37. If a polynomial $p(x)$ is divided by another polynomial $g(x)$, with quotient $q(x)$ and remainder $r(x)$, then $p(x) = q(x).g(x)+r(x)$. What is the condition that $r(x)$ must satisfy?
- (a) $r(x) = 0$ (b) Either $r(x) = 0$ or $\deg r(x) < \deg g(x)$
 (c) $r(x) = 0$ or \deg of $r(x) > \deg g(x)$ (d) $r(x) = g(x)$
38. ΔABC is an equilateral triangle in which $AD \perp BC$, then $AD^2 =$
- (a) $3CA^2$ (b) $3CD^2$ (c) $4BD^2$ (d) CA^2
39. In rolling two die, the probability of getting sum of atleast 6 _____.
- (a) $\frac{11}{36}$ (b) $\frac{15}{36}$ (c) $\frac{26}{36}$ (d) $\frac{29}{36}$
40. If $f(x) = \frac{1}{(\sqrt{x+2\sqrt{2x-4}})} + \frac{1}{\sqrt{(x-2\sqrt{2x-4})}}$ for $x > 2$ then $f(11)$ equals
- (a) $\frac{7}{6}$ (b) $\frac{6}{7}$ (c) $\frac{5}{6}$ (d) $\frac{5}{7}$

□□□