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Student's Reference Sample Paper & Syllabus



Syllabus

- ✓ Syllabus is based on integrated T.S. & A.P. State Boards
- ✓ Competence and knowledge in Mathematics & Science is assessed yearly at the State Level Olympiad.
- ✓ 75% of total syllabus (syllabus covered till 30th November as per Government schedule) from the respective state board is considered for this olympiad.

Exam pattern

Class	No. of Questions	Total Marks	Duration (min.)
Class - 9	100	100	90

For Class 9	
Mathematics	: 50
Physics	: 15
Chemistry	: 15
Biology	: 20

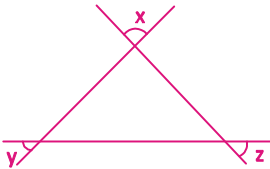
Mathematics

- Write the reciprocal of denominator $\frac{1}{\sqrt{5} + \sqrt{3}}$ []

(A) $\sqrt{5} + \sqrt{3}$ (B) $\frac{1}{\sqrt{5} - \sqrt{3}}$
 (C) $\sqrt{5} - \sqrt{3}$ (D) $\frac{1}{\sqrt{5} + \sqrt{3}}$
- What is the identity for $x^3 + y^3 + z^3 - 3xyz$? []

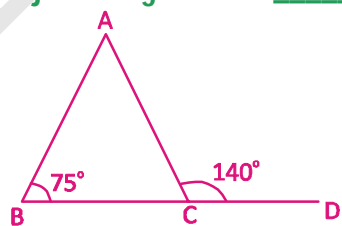
(A) $(x + y + z)(x^2 + y^2 + z^2 + xy + y^2 + 2x)$
 (B) $(x - y - z)(x^2 + y^2 + z^2 + xy + yz + 2x)$
 (C) $(x + y + z)(x^2 + y^2 + z^2 + 2xy + 2yz + 2xz)$
 (D) $(x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$
- Find the factors of $x^3 - 3x^2 - 9x - 5$ []

(A) $(x + 2)(x - 3)(x + y)$
 (B) $(x + 1)^2(x - 5)$
 (C) $(x + 2)(x - 3)(x - y)$
 (D) $(x - 2)(x + 3)(x + 4)$
- How many faces does a cuboid have? []

(A) one (B) two (C) three (D) six
- In the adjacent figure $x^\circ + y^\circ + z^\circ = \underline{\hspace{2cm}}$ []
 

(A) 180° (B) 360° (C) 90° (D) 120°
- The equation $x = 7$, in two variables, can be written as []

(A) $1.x + 1.y = 7$ (B) $1.x + 0.y = 7$
 (C) $0.x + 1.y = 7$ (D) $0.x + 0.y = 7$
- If $x = 3k - 1$ and $y = k + 3$ is a solution of $2x + 3y - 5 = 0$, then the value of k is []

(A) $\frac{2}{9}$ (B) $-\frac{2}{9}$ (C) $\frac{9}{2}$ (D) 0
- In the adjacent figure $\angle A = \underline{\hspace{2cm}}$ []
 

(A) 65° (B) 75° (C) 70° (D) 60°
- The difference of any two sides of a triangle is than the third side. []

(A) greater (B) lesser
 (C) longer (D) none
- It is not possible to construct a triangle when the lengths of its sides are []

(A) 5.3 cm, 2.2 cm, 3.1 cm
 (B) 4 cm, 6 cm, 5 cm
 (C) 9.3 cm, 5.2 cm, 7.4 cm
 (D) 6 cm, 7 cm, 8 cm

Key for 9th Mathematics

1	2	3	4	5	6	7	8	9	10
C	D	B	D	A	B	B	A	B	A

1. Matter in a (i) _____ has a (ii) _____ volume and (iii) _____ shape. []
- (A) (i) gaseous state, (ii) no definite, (iii) no definite
 (B) (i) liquid state, (ii) no definite, (iii) definite
 (C) (i) solid state, (ii) no definite, (iii) No definite
 (D) None of these
-
2. The compressibility order of matter is []
- (A) solids < liquids < gases
 (B) gases < liquids < solids
 (C) liquids < gases < solids
 (D) solids < gases < liquids
-
3. Ratio of distance and displacement is []
- (A) = 1 (B) ≥ 1
 (C) ≤ 1 (D) < 1
-
4. Slope of the distance time graph gives []
- (A) acceleration (B) displacement
 (C) velocity (D) instantaneous speed
-
5. When two bodies of masses m_1 and m_2 moving with velocities u_1 and u_2 in the same direction collide with each other and V_1 and V_2 are their velocities after collision in the same direction, then []
- (A) $m_1v_1 + m_2v_2 = m_2u_2 - m_1u_1$
 (B) $m_1v_1 + m_2v_2 = m_1u_1 - m_2u_2$
 (C) $m_2v_2 + m_2v_1 = m_2v_1 + m_1v_2$
 (D) $m_1u_1 + m_2u_2 = m_1v_1 + m_2v_2$
-
6. When a body is travelling at constant speed, the net force on it is _____ []
- (A) < 1 (B) > 1
 (C) 0 (D) ∞
-
7. The recoil of a gun can be explained with the help of the _____ []
- (A) Newton's First Law
 (B) Newton's Second Law
 (C) Newton's Third Law
 (D) Newton's fourth law
-
8. The temperature at which nitrogen liquifies is []
- (A) -152°C (B) -183°C
 (C) -296°C (D) -196°C
-
9. When is a system said to be isolated? []
- (A) When the nett force acting on it is positive
 (B) When the nett force acting on it is negative
 (C) When the nett force acting on it is zero
 (D) When the nett force acting on it is 1
-
10. Boiling point of liquid argon is []
- (A) -186°C (B) -196°C
 (C) -183°C (D) -166°C

Key for 9th Physical Science

1	2	3	4	5	6	7	8	9	10
A	A	C	D	D	C	C	D	C	A

1. **Dicots have** []
 (A) parallel venation and tap root system
 (B) reticulate venation and fibrous root system
 (C) reticulate venation and tap root system
 (D) parallel venation and fibrous root system
-
2. **Which is true with respect to nature of the plasma membrane** []
 i. It allows water to pass through it.
 ii. It allows certain materials dissolved in water to pass through
 iii. It will not allow certain materials to pass through it
 (A) i only (B) ii only
 (C) i, ii only (D) i, ii, iii
-
3. **Which of the following is unique to plant cells?** []
 (A) Cell membrane
 (B) Plasma membrane
 (C) Cell wall
 (D) Cytoplasm
-
4. **Squamous epithelium is found here** []
 (A) oesophagus (B) Lining of mouth
 (C) Lining of blood vessels
 (D) All the above
-
5. **RBC in human beings after birth are generated in** []
 (A) Bone marrow (B) Liver
 (C) spleen (D) Both B and C
-
6. **The ear canal is also called** []
 (A) Pinna (B) Auditory Meatus
 (C) Ear ossicle (D) Eustachian tubule
-
7. **Which of the following is a process to improve ground water level?** []
 (A) Run off irrigation
 (B) Slope top irrigation
 (C) Water shed
 (D) Drip irrigation
-
8. **This is done at the soil testing centre** []
 (A) Gives knowledge about the soil
 (B) Tests the fertility level of the soil
 (C) Suggests what crops are suitable for the soil
 (D) All the above
-
9. **Fibroblasts secrete** []
 (A) Fibrous material (B) Fibres
 (C) Fat globules (D) Osteocytes
-
10. **These receptors are present in the mucus membrane** []
 (A) Ophthalmic receptors
 (B) Optic receptors
 (C) Auditory receptors
 (D) Olfactory receptors
-

Key for 9th Biology

1	2	3	4	5	6	7	8	9	10
C	D	C	D	A	B	C	D	A	D