

## **INTSO EDUCATION**

SCIENCE TALENT SEARCH OLYMPIAD (STSO) 2015-16

## **CLASS : VII**

STAGE - 1

TIME : 60 min. Max. Marks : 50

marble

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- **Instructions:**
- ∽ Fill the OMR sheet completely and carefully.
- ∽ Each question carries one mark and has only one correct answer. No negative marks
- ∽ The question paper contains 50 questions to be answered in 60 minutes.

## PHYSICS

- Ravi is observing his image in a plane mirror. The distance between the mirror and his image is 1. 2m. If he moves 1m towards the mirror, then the distance between Ravi and his image will be 1) 4 m 2) 2 m 3) 1 m 4) 6 m Γ 1
- 2. If a marble is beyond curvature C and is allowed to roll on plane surface towards concave mirror having focus 'f'. Describe change in the image of marble as it rolls from beyond the curvature towards the mirror. 1

1) Image size increases upto C, same as marble at C

2) Image size decrease upto C, same as marble at C

3) Image size Increases upto C, no image at C

4) Image size decrease upto C, no image at C

A student performs an experiment in which he puts two mirrors perpendicular to each other as 3. shown in the figure. If angle 'P' is 30°, then 1 

1) 
$$|Q = 60^{\circ}, |R = 60^{\circ}$$

- 2)  $|Q = 30^{\circ}, |R = 45^{\circ}$
- 3)  $|Q = 30^{\circ}, |R = 60^{\circ}$
- 4)  $|Q = 60^{\circ}, |R = 30^{\circ}$
- 4. A 1 cm object is placed perpendicular to the principal axis of a convex mirror of focal length 7.5cm. Its distance from the mirror if the image formed is 0.6 cm in size is ſ 1) 10 cm 2) 15 cm 3) 20 cm 4) 5 cm
- 5. A faulty thermometer reads 5°C in melting ice and 99°C in steam. The correct temperature in °F when this faculty thermometer reads 52°C is Γ ] 1) 142°F 2) 130°F 3) 117°F 4) 122°F
- 6. Statement (A) : Woollen clothes keep the body warm in winter Statement (B): Air is a bad conductor of heat 1) Both A and B are true 2) Both A and B are false 4) A is false, B is true 3) A is true, B is false
- 7. Two large holes are cut in a metal sheet. If this is heated, distances AB and BC Γ 1) AB decreases 2) AB increases
  - 3) BC decreases
  - 4) BC remains same

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С

B

8.	The physical quan body is	tity that determines the d	lirection of flow of heat ene	ergy from one body to and	other]
	1) mass	2) volume	3) temperature	4) speed	
9.		-	nuary is 400 units, Februa electricity bill of Februar 3) 300/-	•	ost is ]
10.		-	e affected if another ident ge is maintain at a constar	_	ed in ]
	1) The reading wi	ll be reduced to one half	f		
	2) The reading wi	ll not be affected		ରୁ ଜୁ	
	3) The reading wi	ll be double the previou	s value mair	ns P Q	
	4) The reading wi	ll be increases four time	s		
11.	<b>Reason (R) :</b> Insu 1) Both A and R a	lators have no free char are correct and R is corr are correct but R is not c is incorrect	-	m [	]
12.		are true	arth causes wind moveme 2) Both A and B ar 4) A is false , B is t	e false	]
13.	The instrument th 1) speedometer	at measures the wind sp 2) hydrometer	eed is called 3) manometer	[ 4) anemometer	]
14.	In India more cyc 1) Western side	lones tend to occur on th 2) Northern side	ne 3) Eastern side	[ 4) Southern side	]
15.	velocity, and final	lly retards uniformly to a	from rest uniformly at first come to rest. If the ratio of nen what is the average spect 3) 54 kmph	the time taken is 1:8:1	an
16.	-	-	nstant speed of 4m/s for 2 a e in the given time interval 3) 5		for [
17.		-	om the same point with a us bodies are separated, at th 3) 3m		
		CHF	EMISTRY		
18.	•		speed. Latha's father ask an you guess what the an 3) Kelideoscope	-	
	Pick up the odd or				



25.	Nature of the so 1) Neutral	oil is 2) Acidic	3) Basic	[ ] 4) All of these		
26.	,	will treat his soil with w nanure	hich of the following su 2) Vinegar	f the following substance for better cropping		
27.	<b>Q</b> : I am a substance which can be used for testing of $CO_2$ gas and I am convertine white when $CO_2$ gas is passed through mine					
	$\frac{P}{(aq)} + \frac{Q}{(aq)} \xrightarrow{Process X} R + H_2O$					
	Which of the fo	llowing are correctly ma	atched			
	Р	Q	R	Process X.		
	1) HCl	NaOH	NaCl	Neutralisation		
	2) H <sub>2</sub> SO <sub>4</sub>	КОН	$K_2SO_4$	Double decomposition		
	3) Ca(OH) <sub>2</sub>	HCl	CaCl <sub>2</sub>	Neutralisation		
	4) HCl	Ca(OH) <sub>2</sub>	CaCl <sub>2</sub>	Neutralisation		
28.						
1) vinegar + baking soda       2) lemon juice + washing soda						
	3) water + surf powder 4) all of these will liberate $CO_2$ gas					
29.	$M_2O + H_2O -$	$\rightarrow X$ . common name of t	the product X is caustic s	oda. Here, in this reaction symbol		
	of the element '		N.a.	[ ]		
	1) Na	2) K	3) Mg	4) Ca		
30.	<ul> <li>Breaker A : It consists of 1 litre of HCl solution containing 1 mole of HCl</li> <li>Breaker B : It consists of 1 litre of NaOH solution having 2 moles of HCl</li> <li>Breaker C : It consists of solution obtained by mixing of the above two solutions containing in beaker A and beaker B</li> <li>Which of the following statement is correct regarding the above solutions []</li> <li>1) solution present in the beaker A turns methyl orange indicator to Red</li> </ul>					
	· •	sent in the beaker B turn		±		
	· •	sent in the beaker C turn		4) All are correct		
31.	Pick up the odd one out from the following pair of substances[1) Grapes, Tamarind2) Spinach, Tomato3) Buttermilk, Curd4) Apple, Orange					
32.	Which of the fo	llowing reactions are rea	sponsible for acid rains	[ ]		
	a) $CO_2 + H_2O$ -	$\rightarrow H_2 CO_3$	b) $SO_2 + H_2O$	$\rightarrow H_2 SO_3$		
	c) $4NO_2 + O_2 + 2H_2O \rightarrow 4HNO_3$		d) $Cl_2O_7 + H_2O_7$	d) $Cl_2O_7 + H_2O \rightarrow 2HClO_4$		
	1) All of these	2) Only a, b and	d c 3) Only b, c, d	4) c and d only		
33.	$A_2 + B_2 \rightarrow 2AB$	$3 \xrightarrow{H_2O} Substance X$		[ ]		
		l as glass cleaner. Choos	e the correct set regardi	ng A, B and AB		
	Α	B	AB			
	1) Element	Element	Compound			
	2) Compour		Compound			
	3) Element	Compound	Compound			
	4) Compour	-	Element			

34.	So sugar is a naturally occurring substance from sucrose.							
	Sugar + water							
		Sugar so	olution					
		♦ No change with	No change an the					
		blue litmas	No change on the addition of methyl					
	~ .	and red litmus papers	orange indicator		-	-		
	So sugar is a 1) salt	2) Neutral substance	3) Both 1 and 2	4) Cannot be	[ predic	] rted		
	i) suit		, ,	+) Califiot be	predic	πu		
		BIOL	OGY					
35.	Observe the follow	wing table			[	]		
	Starch	Glucose						
	Proteins	X						
	Fats	Fatty acids and Glyce	rol					
	X represents 1) Vitamins	2) Amino acids	3) Nucleic acids	4) Roughage				
26	<i>,</i>	· · ·		, , ,	г	1		
36.	Copper sulphate and Sodium hydroxide are used to test the presence of1) Carbohydrates2) Proteins3) Fats4) Vitamins					]		
37.	The protein presen 1) Collagen	nt in milk is 2) Keratin	3) Casein	4) Albumin	[	]		
38.	Anil is taking diet,	which is rich in carbohydrat	es, proteins, fats, vitami	ns and minerals.	Thoug	gh he		
		diet he is suffering from c	constipation. What do	you suggest hin	n to a	void		
	constipation. 1) Food with more	a watar	2) East with more ro	ughagaa	[	]		
	3) Food with more		<ul><li>2) Food with more ro</li><li>4) Food without any r</li></ul>					
39.	Identify the misma				[	]		
	<ol> <li>Potato : Carboh</li> <li>Rice : Protein</li> </ol>	nydrate	<ol> <li>2) Chicken : Protein</li> <li>4) Egg : Protein</li> </ol>					
40.	•	present in the cotton is			[	]		
	1) Fructose	2) Glucose	3) Chitin	4) Cellulose				
41.	The wool given by	- 1	2) 1( 10 los /	4) 10 <b>2</b> 0 l	[	]		
	1) 5 - 10 kg / year		3) 16 - 18 kg / year	4) 10 - 20 kg	/ year	1		
42. Observe the picture showing the life cycle of silk Moth The process by which stage 5 develops in to 6 is				6	L	]		
			5	ANA				
	1) Metamorphosis	i		•1				
	2) Replication		(					
	3) Reproduction		4	1500				
	4) Parthenogenesi	S	Christian of	2				
			3	CIRCUM -				
$\square$								

43.	Shearing $\rightarrow$ Scouring $\rightarrow$ X $\rightarrow$ Bleaching $\rightarrow$ Dyeing $\rightarrow$ Y $\rightarrow$ Spinning $\rightarrow$ Z $\rightarrow$ Rolling & Twisting $\rightarrow$ Woolen fabric []1) X - Sorting, Y - Weaving, Z - Carding 3) X - Sorting, Y - Combing, Z - Weaving2) X - Weaving, Y - Sorting, Z - Knitting 4) X - Combing, Y - Sorting, Z - Weaving						
44.	Read the following statements and identify the incorrect       [         1) Woolen threads stretched from top to bottom are called warp threads         2) Woolen threads that go side to side are weft threads         3) Soft mass of wool is fleece         4) Removal of grease, dirt and dust from the wool is called shearing					]	
45.	Structure present on the bark of the plant which are useful for exchange of gases are[1) Hydathodes2) Pneumatophores3) Stomata4) Lenticels					]	
46.	Part - I	Part - II			ſ	1	
	i) Von Helmont		by break down of wate	r molecule	L	L	
	,		•				
	ii) Stephen Hales	b) Green parts of plant		it make the air pt	ire		
	iii) Priestley c) Leaves are the organs of transpiration						
	iv) Ingenhousz	d) Animals making the	-				
	1	· •	due to water in the soil				
	1) $\mathbf{i} - \mathbf{c}$ , $\mathbf{ii} - \mathbf{e}$ , $\mathbf{iii} - \mathbf{a}$ , $\mathbf{iv}$		2) $i - e, ii - c, iii - d, i$				
47.	3) i - e. ii - d, iii - b, iv Observe the picture of		4) i - e, ii - b, iii - c, i	v - u			
			Y				
	Y in the above diagram 1) Guard cells	n represents 2) Stomata	3) Epidermal cells	4) Chloroplas	t		
48.	Micronutrient required 1) Potassium	l for plant growth is 2) Phosphorous	3) Nitrogen	4) Molybdenu	] 1m	]	
49.	The reason for trapping the insects by insective 1) To meet the nitrogen requirement 3) To get Iron molecule		<ul> <li>vorous plants is []</li> <li>2) To perform photosynthesis</li> <li>4) To get all essential carbohydrates and proteins</li> </ul>				
50.	<ul><li>Which of the following represents the functio</li><li>1) Preparation of food for its partner</li><li>3) Providing chlorophyll to its partner</li></ul>		<ul> <li>on of Fungi in Lichen association []</li> <li>2) Protection of its partner from intense sunlight</li> <li>4) All the above</li> </ul>				
l							