

INTSO EDUCATION

SCIENCE TALENT SEARCH OLYMPIAD (STSO) 2015-16



10.	Shadows are formed due to of l 1) Rectilinear propagation 3) Refraction	light 2) Dispersion 4) Absorption		[]				
11.	 Statement (A) : When moon comes in B reaching earth, resulting Statement (B) : When moon comes in B reaching earth, resulting 1) Both A and B are false 3) Both A and B are true 	between sun and earth, i g in solar eclipse. between sun and earth, i g in lunar eclipse. 2) A is true, B is fa 4) A is false, B is true	t obstructs the su t obstructs the su lse rue	nlight nlight [from from]				
12.	It is desired to photograph the image of an The camera, which is at a distance of 4.5 m 1) 3 m 2) 4.5 m	n object placed at a distant m from the mirror, should 3) 6 m	ce of 3m from a p be focused for a 4) 7.5 m	lane m distano [iirror. ce of]				
13.	See the following figure, which of the obje	ect shown in figure will no	ot form its image i	n the n	nirror				
	1) $O_1 O_2 \bullet$ 2) O_2	•O ₃		[]				
	3) O ₄								
	4) O ₃	•O ₄							
14.	How many seconds are equal to 6 hours 81) 22080 sec2) 43200 sec	min ? 3) 129648 sec	4) 648240 se	[ec]				
15.	One nautical mile is 6080 ft, convert 18 na	autical mile per hour in m	etre per second	[]				
	1) $\frac{22}{15}$ ms ⁻¹ 2) 9.26 ms ⁻¹	3) 4.28 ms ⁻¹	4) 7.36 ms ⁻¹						
16.	$1 \text{ cm}^{3} = _ _ _ \text{ml} \\ 1) 100 \qquad 2) 1000$	3) 10	4) 1	[]				
17.	Ramu's father had a nearly circular plot of radius 100 ft. He built a house occupying length 100 ft of the plot and breadth 100 ft and in the remaining area he planned for a garden is ft ² 1) 21400 2) zero 3) 2140 4) 10000 [1								
	CHEMISTRY								
18.	. Pick up the odd thing from the following based on the property given								
	Property : - Method of separation								
	 Bran from flour Small germs from wheat flour 	2) Stones from san4) Chaff from grain	d 1						
19.	$P+Q \rightarrow S$. 'P' is the pure from of sub-	bstance which cannot b	e brokendown in	nto sir	npler				
	substance. Molecule of Q contains two kinds of atoms which are chemically combined in a fixed proportion by mass. 'S' is only the product obtained by reaction between 'P' and 'Q'.								
	which of the following reaction satisfy the		20	L]				
	1) $\underset{(P)}{\overset{N_2}{(P)}} + \underset{(Q)}{\overset{+}{(Q)}} \rightarrow 2NO$ (s)	2) $2CO + O_2 \rightarrow 2C$ (P) (Q) (Q)	SO_2 s)						
	3) $\underset{(P)}{O_2} + 2SO_2 \rightarrow 2SO_3$ (S)	4) $\operatorname{SO}_{(P)}^{2} + H_{2} \underset{(Q)}{O} \rightarrow H_{2}$	\mathbf{H}_{2} SO ₄ (S)						
\square									

20.	Formation of a compound from its constituent elements is a 1) Physical change 2) Chemical Change 3) Neither Physical change nor chemical change 4) Can not be predicted					[]		
21.	Hydrogen and oxygen can combine in different ratios to form two compounds A and B. The ratio of number of hydrogen atoms to numbers of oxygen atoms in one molecule of A and one molecule of B respectively are 2 : 1 and 1 : 1. Now the ratio of number of hydrogen atoms in one molecule of A to number of hydrogen atoms in one molecule of B is						e ratio ecule atoms]		
	1) 1 : 1	2) 2 : 1	3) 1	: 2			4) can not be	e predi	cted
22.	Observe the venn diag	ram carefully							
	Matter C Compound A B Exist as gas at room temperature								
	Correct match among \mathbf{A} \mathbf{B} \mathbf{C} 1) $\mathbf{SO}_2 \mathbf{O}_2$ Fe 3) $\mathbf{H}_2\mathbf{O} \mathbf{N}_2\mathbf{O} \mathbf{N}_2$	D Ne Br ₂	2) 4)	A NaCl CO ₂	B SO ₂ NH ₃	C HCl HCl	\mathbf{D} \mathbf{O}_2 \mathbf{O}_2 He	e []
23.	Which of the following 1) O ₂	g is a diatomic molecule 2) CO	of con 3) N	npoun e	d		4) H ₂ SO ₄	[]
24.	$2Mg + O_2 \rightarrow 2MgO$ According to the above molecules of MgO is 1) 6	e equation, number of o 2) 2	xygen 3) 3	molec	ules r	equire	ed form the for 4) 1	rmation [n of 6]
25.	What happens when ex 1) water can dissolve a 2) common salt crystal 3) common salt is not s	ded to ter forr 4) It	a glas ning a forms	s of w satura an un	ater at ated so satura	t room temper olution ted salt solution	ature [on.]	
26.	Pick up the odd one fro 1) pure water 3) milk	om the following based	on the 2) th 4) su	chemi e gas v Igar	cal co which	mpos we ex	ition khale	[]
27.	i) Na ii) CaCO ₃		p) q)	Colu Cher Phys	i mn - nical c ical cl	II equation hange	on		
	iii) $2H_2O + O_2 \rightarrow 2H_2O_2$		r)	Sym	bol				
	iv) NaCl + H ₂ O \rightarrow	Aq NaC <i>l</i>	s)	Cher	nicalf	formu	la		
	i ii iii	iv		i	ii	iii	iv		
	1) r s q	р	2)	r	S	р	q		
	3) s r q	р	4)	q	r	р	S		
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28.	Solution is a homogeneous mixture of a solute and solvent. Harish dissolved 10 g of a solid 'X' in 100 g of water to prepare a saturated solution. Then he tried to dissolve some more amount of solute i.e. 5 g but it is not dissolved. Now if he wants to separate solid 'X' from water suggest him a separation technique and how much amount of solid 'X' can be separated [] 1) Distillation, 10 g of solid 'X' 2) Filtration, 10 g of solid 'X' 3) Evaporation, 15 g of solid 'X' 4) Filtration, 15 g of solid 'X'						
29.	Kavitha and Mamatha are the students of VI class. When they are in the science lab their science teacher asked them to separate the liquid mixture of three components A, B and C. They tried to separate out the components of mixture by fractional distillation method and noted their observations Liquid A - collected at the top of fractionating column Liquid B - collected at bottom of fractionating column Liquid C- collected at the middle of fractionating column Then arrange these three liquids in decreasing order of their boiling points [] 1) $A > B > C$ 2) $B > A > C$ 3) $C > B > A$ 4) $A > C > B$						
30.	Take water containing fine particles of clay in a beaker. Put a big crystal of alum in the beaker.The alum will dissolve in water. The particles of alum will load the fine clay particles. Then clayparticles become heavier and settle down forming a sediment very rapidly. This process of separationof insoluble suspended particles in a solution is called1) Sedimentation2) Decantation3) Filtration						
31.	Which of the following combinations of mixture and its separation technique is correct []1) Husk and grain - Hand picking2) Fine sand and gravel - hand picking3) Iron and sulphur - by adding CS24) Coal and rock - sieving						
32.	The main factors involved in the separation of sand from water by sedimentation method is1) Density2) Volume3) Gravitational force4) Pressure[
33.	A fine spray of milk is injected from the top of a vessel. From bottom of this vessel rises a very hot current of air. The hot air removes water from milk and the dry powder collects at the base of vessel. This is because of []] 1) Distillation 2) Evaporation 3) Filtration 4) Centrifugation						
34.	Chromatography is a novel method of separation technique which is used to separate coloured components of mixture and to study the purity of the substances. A standard chromatogram of three substances X, Y and Z is given and the experimental chromatogram of X, Y and Z when a student performed chromatography to study the purity of X, Y, Z is also given. []						
	$ \begin{array}{c} $						
	By observing above chromatograms identify the impure sample among X, Y and Z.1) X and Y only2) Z and X only3) Only Z4) Only X						

	BIOLO	DGY				
35.	Read the following Food componentsI. CarbohydratesII. ProteinsArrange them in an order based on their energy1) III - II - I2) I - II - III	III. Fats y requirement to the body 3) I - III - II	y. 4) II - I - III	[]	
36.	Identify the mismatch 1) Beet root : Carbohydrates 3) Peanut : Protein	 2) Tomatoes : Vitamin 4) Onion : Antioxidant 	- D	[]	
37.	I am the Vitamin present in milk I will keep the bones and teeth strong I am available in Fish meat Who am I 1) Vitamin - C 2) Vitamin - D	3) Vitamin - E	4) Vitamin - K	[]	
38.	 Which of the following is incorrect 1) The food with all essential nutrients is called balanced diet 2) Eating food with carotenoids can lower the risk of cancer 3) Fruits are the good source of roughages. 4) Spoiled food cannot show any effect on our health 					
39.	Which of the following organisms use the sense1) Chamaeleon2) Vulture	e of hearing to identify t 3) Bat	he prey . 4) Snake	[]	
40.	Which of the following is correct representatio 1) Plant \rightarrow Grasshopper \rightarrow Snake \rightarrow Frog - 2) Worm \rightarrow Hen \rightarrow Fox \rightarrow Deer \rightarrow Lion 3) Seeds \rightarrow Rat \rightarrow Snake \rightarrow Eagle 4) Plant \rightarrow Deer \rightarrow Rabbit \rightarrow Fox	n of Food chain → Peacock]]	
41.	 Assertion (A) : Desert animals are Diurnal animals Reason (R) : They move actively during night, time and during day time they hide in (1) Both A and R are true and R is the correct explanation of A 2) Both A and R are true and R is not correct explanation of A 3) A is correct and R is incorrect 4) A is incorrect and R is correct. 					
42.	Which of the following teeth are well develope1) Incisor2) Premolar	ed in carnivore animals to 3) Canine	tear the flesh. 4) Molar	[]	
43.	Identify the similar organisms based on their fe 1) Cow, Goat, Tiger, Lion 3) Fox, Wolf, Tiger, Lion	eding habit 2) Frog, Snake, Rabbit 4) Grasshopper, Frog,	, Lizard Snake, Bird	[]	
44.	Which of the following is the correct method o1) Drying, Pickling, adding Sugar - syrup3) Pickling, Honey syrup	f Fish preservation2) Drying, Salting, Sm4) All the above	oking	[]	
45.	Which of the following are the world's most di1) Trees2) Grass lands	verse habitats. 3) Desert	4) Coral reefs	[]	
46.	Farmers grow single variety of fruit yielding tro1) Grassland2) Orchard	ees in a 3) Forest	4) Agricultura	[1 land]	

47.	Surface of the pond	Р			
	Mid water of pond	Q			
	Margins of pond	R			
	Bottom of the pond	S			
	R & S .From the above t 1) Frog & Leech 3) Crabs & Mussels	able represe	ents 2) Maggot & Snail 4) Pond skater & Great water boatmar]]
48.	Which of the following it 1) It is the dwelling place 2) It provides optimum of 3) Fields, forest and dese 4) Ponds, water tanks &	s incorrect i e for organis conditions fo erts are terre lakes come	regarding habitat. sms or life. strial habitats. s under arboreal habitats.	[]
49.	Certain birds and fishes r regarding the migration (1) It migrates from fresh 2) It migrates from sea to 3) It migrates from river 4) It do not migrate	nigrate from of pulasa fis water to sat o river for re to sea for re	n one place to another place. Which of the following sh? It water for food. eproduction eproduction	; is co [rrect
50.	Which of the following in 1) Pelicans	migratory bi 2) Siberian o	ind can be seen in Kurnool district. (2) Batta meka Pitta 4) Swan.	[]