

Annual Examinations for Middle Schools 2024

YEAR 7	INTEGRATED SCIENCE	MARKING SCHEME
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Question			Answer	Mark																
1	a	i	Heat	1																
		ii	Oxygen	1																
		iii	Fuel	1																
	b	i	The hazard sign indicates that the contents of the barrel are flammable.	1																
		ii		1																
	c		<table><tr><th>STEP</th><th>ORDER</th></tr><tr><td>Turn on the gas tap.</td><td>4</td></tr><tr><td>Open the air-hole to obtain a hot, blue flame.</td><td>6</td></tr><tr><td>Close the air-hole.</td><td>3</td></tr><tr><td>Place the Bunsen burner on a heat-proof surface.</td><td>2</td></tr><tr><td>Close the gas tap and the air-hole when its use is complete.</td><td>7</td></tr><tr><td>Put on your safety glasses.</td><td>1</td></tr><tr><td>Light a match and place it on the chimney.</td><td>5</td></tr></table>	STEP	ORDER	Turn on the gas tap.	4	Open the air-hole to obtain a hot, blue flame.	6	Close the air-hole.	3	Place the Bunsen burner on a heat-proof surface.	2	Close the gas tap and the air-hole when its use is complete.	7	Put on your safety glasses.	1	Light a match and place it on the chimney.	5	1 mark each for steps 2 to 6 in the correct order. (5 marks maximum) (Accept as correct if steps 2 and 3 are in swapped positions.)
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Light a match and place it on the chimney.	5																			
			Total: 10 marks																	

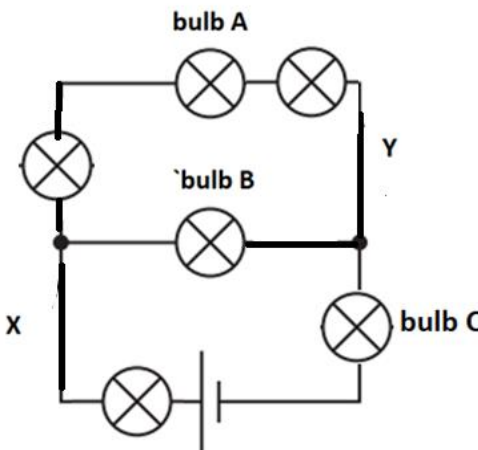
2	a		pH3	1
	b	i	The scientist must observe colour changes in the universal indicator paper.	1
		ii	The scientist must compare her/his observations to the pH colour chart to find the pH.	1
		iii	No she/he cannot, because with litmus paper one can only conclude whether lemonade is an acid or an alkali, not the pH.	1 1
	c	i	pH9	1
		ii	Only an alkali can neutralise an acid (lemonade). pH9 is the only alkaline value from the three options.	1 1
	d		vinegar orange juice (Accept any one or other equivalent answer)	1
			Total: 9 marks	

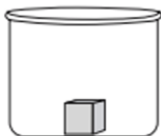
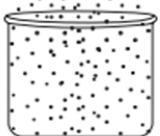
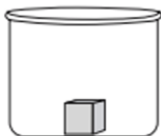
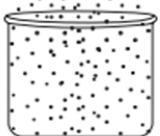
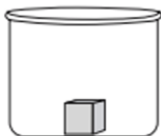
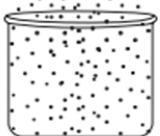
3	a		Respires Feeds Moves Reproduces Excretes Responds Grows (Accept any two)	1 1									
	b		<table><tr><td></td><td>Group 1</td><td>Group 2</td></tr><tr><td>Letters representing animals in each group:</td><td>A, E and F</td><td>B, C and D</td></tr><tr><td>Reason for grouping animals together:</td><td>All have legs</td><td>None have legs</td></tr></table> Accept 'All have 6 legs' for animals A, E and F. Accept 'All are divided into many segments / sections' for animals B, C and D. Accept if animals and corresponding valid reason are placed in Group 2 instead of Group 1 and vice versa. Accept any other possible grouping with a corresponding valid reason.		Group 1	Group 2	Letters representing animals in each group:	A, E and F	B, C and D	Reason for grouping animals together:	All have legs	None have legs	1 mark each for valid grouping 1 mark each for corresponding valid reason (maximum 4 marks)
	Group 1	Group 2											
Letters representing animals in each group:	A, E and F	B, C and D											
Reason for grouping animals together:	All have legs	None have legs											

	c	i	The snail has a shell that protects it.	1
		ii	The duck's feet are better at pushing water. (Accept: The duck's feet are similar to flippers. Accept 'webbed' instead of 'similar to flippers')	1
				Total: 8 marks
4	a	i	measuring cylinder	1
		ii	balance	1
		iii	funnel	1
	b		A pipette is used to transfer a small amount of liquid. A spatula is used to transfer a small amount of solids. (Accept: 'powder' or 'crystals' instead of 'solids').	1 1
				Total: 5 marks

5	a		Thermometer	1
	b		Degrees Celsius	1
	c		Valletta: $30^{\circ}\text{C} - 23^{\circ}\text{C} = 7^{\circ}\text{C}$ Bucharest: $12^{\circ}\text{C} - 3^{\circ}\text{C} = 9^{\circ}\text{C}$ In Bucharest	1 (Reduce 0.5 mark if one reading and subtraction answer are incorrect) 1 (Reduce 0.5 mark if one reading and subtraction answer are incorrect) 1
	d		Pippa because she is taking the reading at eye level.	1 1

	e		Jane will have the most accurate reading, (accept both 'Jane (B)' or 'B' instead of 'Jane') as her body (hand) temperature will not affect the reading of the room temperature.	1 1
	f	i	Romania	1
		ii	The two measurements are changed to the same units. (Accept: Both values are turned to kilometres Or Both values are turned to metres.)	1
			Total: 11 marks	
6	a		x10 x eye-piece lens = x100 eye-piece lens = x10 (Accept 'x10' even if working not shown)	1
	b		Cell wall Chloroplast	1 1
	c	i	The place where chemical reactions of the cell happen.	1
		ii	Allows substances to enter and leave the cell.	1
	d	i	A: fruit B: roots	1 1
		ii	A: Fruit protect the seeds which will grow into new plants. B: Roots absorb water needed by the plant for photosynthesis and support. or Roots anchor the plant firmly in the soil.	1 1
		iii	Ovary	1
		iv	X: Petals Y: Style (Accept: Carpel)	1 1
		v	The petals can be colourful. or Petals can be scented. (Accept any one or equivalent)	1
			Total: 13 marks	

7	a	i	Sperm cell	1
		ii	Nucleus: Controls the cell. or Contains the male's genetic information. Tail: Helps the sperm to swim towards the egg.	1 1
	b	i	C (testes)	1
		ii	The sperm duct allows sperm to move from the testes into the penis.	1
			Total: 5 marks	
8	a	i	True False True True	1 1 1 1
		ii	Bulb B and bulb C	1 1
		iii	Bulb A and bulb B will not light. Plastic is an insulator and does not allow electricity to pass through. (Thus, there is an open circuit.)	1 1
	b			1 mark for bulb placed correctly (anywhere except next to bulb B) 1 mark for adding all connections to complete circuit
			Total: 10 marks	

9	a		<table><tr><td></td><td></td><td></td></tr><tr><td>solid</td><td>liquid</td><td>gas</td></tr><tr><td>Does it have a fixed shape?</td><td>Yes</td><td>No</td><td>No</td></tr><tr><td>Can it be compressed?</td><td>No</td><td>No</td><td>Yes</td></tr></table>				solid	liquid	gas	Does it have a fixed shape?	Yes	No	No	Can it be compressed?	No	No	Yes	1 mark each (6 marks maximum)
																		
solid	liquid	gas																
Does it have a fixed shape?	Yes	No	No															
Can it be compressed?	No	No	Yes															
	b		<table><tr><td> Melting </td><td> Evaporation </td><td> Boiling </td></tr><tr><td> Evaporation </td><td> Condensation </td><td></td></tr></table>	Melting 	Evaporation 	 Boiling	 Evaporation	 Condensation		1 mark each (5 marks maximum)								
Melting 	Evaporation 	 Boiling																
 Evaporation	 Condensation																	
			Total: 11 marks															

10	a	i	Cricket	1
		ii	Cricket or Frog or Snake	1
	b	i	Photosynthesis	1
		ii	Carbon dioxide	1
	c	i	Amphibian	1
		ii	Damp skin	1

			or Live both on land and in water. (Accept any one or equivalent)	
	d	i	Mammals or Birds or Fish (Do not accept reptiles or amphibians)	1
		ii	Fur or hair or Feathers or Scales (Accept only a correct answer corresponding to the vertebrate group named in d i.)	1
	e	i	The organism's population is decreasing, with a risk of becoming extinct.	1
		ii	Destruction of their habitat. or Catching them and removing from their natural habitat. or Killing / Catching tadpoles. (Any one or equivalent)	1
		iii	Jamie is correct If all the frogs died, the snake would hunt for other food to eat, so they will not die of hunger. Jonathan is correct If all frogs die and there is no other food, the snakes will all die. (Accept any one)	1 1
			Total: 12 marks	

11	a		A: Placenta	1
			B: (Umbilical) Cord	1
	b	i	Uterus	1
		ii	Amnion Sac (accept Amniotic Fluid)	1
	c		Avoiding smoking and alcohol Eating a balanced diet Having a good intake of calcium Attending pre-natal clinics Having adequate rest (Any two or equivalent)	1 1
			TOTAL: 6 marks	