

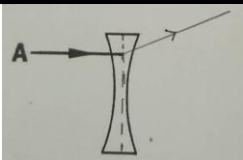
# FINAL OFFICIAL MARKING GUIDE PLE INTEGRATED SCIENCE 2022

DEVELOPED BY TEACHERS OF TEACH & LEARN SCIENCE PLATFORM

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## SECTION A (40 MARKS)

NO.	CORRECT RESPONSE/ANSWER	WRONG RESPONSE / WRONG ANSWER	THEME	TOPIC & CLASS	QL	OTHER INFORMATION
1	Lateral bud / Axillary bud	<i>Auxillary bud/ Terminal bud</i>	WOLT	Plant life, P.4	K	
2	Availability of flowering plants. // Accessibility of the site. // Safe distance away from the homesteads/people and livestock. // Safe distance from noise & disturbances. // Availability of adequate windbreaks. // Nearness to fresh water supply. // Presence of shades. // Presence of security against theft and vandalism. // The site should be fairly dry, away from swampy or flooding valley or any bottom land with stagnant water. // Presence of reasonable distance from the ground.	<i>Safety from predators such as wax moths, safari ants and other parasites.</i>	SHAO	Keeping poultry and bees, P.5	C	<i>Comment on Wrong response: Predators may be absent at onset of the apiary but may come over time)</i>
3	They build the body. // They promote body growth // Repair worn-out body tissues. // Replace worn out body cells.	<i>Prevent kwashiorkor // Make enzymes and antibodies.</i>	HH	Food and Nutrition (or food, P.4	C	<i>It's true that proteins make enzymes and antibodies but it is not content for primary level)</i>
4	Evaporation is important in formation of rain. // It is important in distillation process to produce clean water. // It is important in distillation process to produce alcohol. / Helps to separate mixtures of substances with different boiling points.	<i>Helps in rain fall /Helps in rainfall formation</i>	M&E	Heat Energy, P.5	C	
5	To prevent indigestion. // To ease chemical digestion of food. // To ease peristalsis. // To prevent choking. // To stimulate saliva production for chemical digestion of food.	<i>To prevent <b>chocking</b></i>	HB	Digestive System, P.5	C	
6	Wearing dry and clean stockings. // Dry feet before wearing socks and shoes. // Avoid sharing shoes or socks.		HH	Personal Hygiene, P.6	A	
7	Concave lens/ Diverging lens	<i>Convex lens// Biconcave</i>	M&E	Light Energy, P.7	K	<i>Ray should bear</i>

		<i>lens// Converging lens.</i>				<i>arrow head. Use a pencil to draw it. There must be a dotted line passing through the principal axis of the lens <b>from</b> which refraction starts.</i>
8			M&E	Light Energy, P.7	A	
9	Organising school health parades.// Educating community members about how malaria spreads.// Sensitising the community about the dangers of malaria.// Sensitizing community members about control of malaria. // Encouraging school children to sleep under mosquito nets. // Putting up campaigns bout community hygiene.// Singing songs about dangers and control of Malaria. // Acting drama and holding talk shows on malaria control.	<i>Killing mosquitoes</i>	CPFL	Population & Health concerns, P.7	A	
10	Pulp cavity	<i>Dentine// Sensory nerves</i>	HB	The teeth, P.4	K	
11	Due to displacement of some water by the volume of the stone. / The space occupied by the stone displaces some water. / The stone displaced water equal to its volume.		M&E	Measurements	C	
12	Smoking causes lung cancer // Smoking causes Emphysema// Smoking damages the lungs.// Smoking worsens condition of Bronchitis // Smoking worsens condition of Asthma.	<i>Causes asthma// Causes Bronchitis</i>	HH	Alcohol, Smoking & Drugs	C	<i>Smoking doesn't cause Bronchitis or Asthma but worsens it in patients.</i>
13	Immunisation // Control of communicable diseases. // Information and Health Education. // Personal Hygiene //Water and Sanitation.		HH	Primary Health Care, P.6	K	
14	They grow and mature within one year. / They take one season to mature.	<i>They grow and mature within one year <b>and are harvested once.</b></i>	WOLT	Growing Crops, P.5	C	<i>Not all annual crops are harvested once. E.g., Some indeterminate tomato varieties may be harvested continuously throughout the year.</i>

15	Using them sparingly // Using alternative sources of energy such as biogas and solar energy.// Avoid over mining of fossil fuels. //Riding bicycles instead of driving personal cars.	Using <i>other alternative</i> sources of energy	Env't	Resources in Our Env't, P.7	A	
16	Jinja fly/simulium fly/ blackfly/Simulid fly / Hunchback fly.		HH	Vectors & Diseases, P.4;Water & Sanitation/Pop'n & Health, P.7	K	
17	Ear tagging	Ear notching //Numbering	SHAO	Keeping Goats, Sheep & Pigs	C	
18	For easy identification of goats.		SHAO	Keeping Goats, Sheep & Pigs	C	
19	Sunny weather	Dry weather//Dry season	MC	Weather changes around us, P.4	K	
20	Crossing a busy road at a Zebra crossing. // Using flyovers while crossing a busy road. // Looking right, left and right again before crossing a busy road.		HH	Accident Poisoning & First Aid, P.4	A	
21	Heart /The heart // Lungs/The lungs.		HH	Body Organs, P.4	K	
22	Blown out filament. // When dry cells are exhausted.// When parts of the terminals of the torch are rusty. // Rusty dry cell terminals.	Poor arrangement of dry cells.	M&E	Electricity, P.7	C	When dry cells are poorly arranged, the circuit is not considered complete.
23	Bathing well. // Bathing regularly/daily.// Wearing deodorants// Washing underwears regularly.// Putting on clean underwears.// Shaving pubic hairs.	Wearing perfumes.	HH	Personal hygiene, P.4/P.6	A	Wearing perfumes may worsen the situation. Deodorants, which stop sweating, may solve the problem instead.
24	By sorting them before washing. // Washing clothes according to their colours.		HH	Personal hygiene, P.4/P.6	A	
25	Reptiles /Reptalia	Reptilia /Amphibians	WOLT	Classification, P.6	C	
26	By hiding in its hard shell. / By withdrawing into its hard shell.		WOLT	Classification, P.6	C	
27	Through <b>immunization</b> of infants (with BCG vaccine) at birth. // Covering the mouth when coughing.// Isolation of infected persons. // Properly boiling milk for drinking //	Properly boiling water for drinking.	HH	Immunization, P.5	A	TB is not a water-borne disease.

	Wearing face masks in congested places. // Treating infected persons at early stages of the disease.					
28	Serving food in dirty containers. // Touching food with dirty hands. // Eating in dirty places. // Leaving food uncovered. // Cockroaches landing on the food. // Dirty objects falling on food. // When houseflies vomit on prepared food.		HH	Sanitation, P.6	C	
29	Molecules/particles in solids are closely packed which makes them to vibrate faster than in other states of matter.		M&E	Matter, P.5	C	
30	Switching off electric sockets when not in use. // Installing sockets at higher levels where children can't reach. Teaching Children how to prevent electric shock at home. // Keeping away electric appliances from children's reach.	<i>Teaching children dangers of electric shock.</i>	HH	Accidents & First Aid, P.6	A	<i>Toddlers don't understand this!</i>
31	They make joints more flexible. / (Reduce joint pain) // They strengthen body muscles. // Help muscles to generate heat.		HB	Muscular-skeletal system, P.7	C	
32	Both moulds and ferns reproduce by means of spores.	<i>Both organisms feed saprophytically. // Both are non flowering plants.</i>	WOLT	Kingdom fungi, P.5, Classification of plants, P.6.	C	<i>Ferns have chlorophyll &amp; feed autotrophically.</i>
33	To keep the pit hole dry. // To reduce bad smell from the pit latrine. // To control the movement of maggots around the latrine pit hole. // To kill germs around the hole of the pit latrine.		HH	Sanitation, P.6	C	
34	Water vapour // Carbon dioxide	<i>Urea // Sweat // Condensed vapour // <u>Carbondioxide</u></i>	HB	Excretory System, P.6	K	
35	Planting trees. // Educating members about deforestation. // Educating members about re-afforestation. // Holding debates and composing songs about ways of conserving the environment. // Controlled bush burning.	<i>Bush burning</i>	CPFL	Population & health concerns, P.7	A	
36	Using thick curtains. // Covering walls of large halls with soft boards. // Putting ceilings in large halls. // Using woolen blankets on walls of large halls.	<i>Use of plywood</i>	M&E	Sound Energy	A	
37	Water softens the testa/seed coat for the radicle to come out. // It dissolves the stored food in a seed for the embryo to absorb.	<i>...radical...</i>	WOLT	Classification of plants, P.6	C	
38	Tapeworms feed on digested food in humans.	<i>Tapeworms feed on</i>	WOLT	Invertebrates &	C	<i>Tapeworm is</i>

		blood. <i>Rej: Tape worms</i>		Worms, P.4 & P.6.		<i>correct but Tape worm isn't.</i>
39	Keeping drugs out of reach of children. // Proper storage of drugs. // Checking the expiry dates of a drug before giving it to the children.// Following instructions on drug use as directed by medical personnel. // Labelling poisonous drugs. // Storing drugs in sealed containers.	<i>The child should follow drug prescription.</i>	HH	Alcohol, Smoking & drugs in society, P.6	A	<i>Children can't follow drug prescription.</i>
40	Influences temperatures of an area. // Reduces visibility causing traffic accidents on runways. // Protects animal life from direct sunlight.// Causes rain formation.//Reduces heat intensity // Reduces light intensity.		ENV'T	Our Weather P.1, Weather changes around us, P.4	C	

### SECTION B (60 MARKS)

NO.	CORRECT RESPONSE(S) / ANSWER(S)	INCORRECT/WRONG RESPONSE(S) /ANSWER(S)	THEME	TOPIC/CLASS	QL	OTHER INFORMATION
41	a) Chemical change b) Physical change c) Biological change d) Physical change.	<i>Any other</i>	ENV'T	Changes in the environment.	C	
42	<b>a i) Sanitation</b> is the way of keeping an area clean for public health.// Sanitation refers to steps taken to keep an area clean. <b>ii) Personal hygiene</b> is the general cleanliness of the body and materials we use to clean it. <b>b)</b> Sweeping rubbish from the compound// Picking rubbish from the compound //Proper disposal of rubbish // Slashing bushes around the school // Digging rubbish pits // Burning rubbish at the rubbish pit // // Mopping classrooms, verandahs and offices//Scrubbing inside latrines and bathrooms.		HH	Sanitation/ Personal hygiene, P.4	A	
43	a) Zero grazing		SHAO	Cattle Keeping, P.6	C	
	b) Farm Yard manure/ Farmyard Manure.				K	
	c) Animals are protected from harsh/bad weather. // Animals are protected from wild animals and thieves. // It is easy to estimate feed intake per animal/quantity of feeds per animal. // There is less wastage of feeds by animals.//				C	

	It is easy to identify sick animals. // There is less wastage of energy by animals since they do not move long distances. // Distant pastures can be utilized by animals. // It is easy to keep individual animal records. // It is easy to control animal parasites. // It is easy to control animal diseases. // Prevents straying of animals. // Allows re-growth of pastures.// Enables a high stocking rate of farm animals.				
44	a) First Class lever		M&E	Simple machines, P.7	A
	b) Let Jjuko's mass be M kgs Load $\times$ load arm = Effort $\times$ Effort Arm $L \times LA = E \times EA$ $= 40 \times 2.5 = M \times 4$ $= 4 \times \frac{25}{10} = 4M$ $100 = 4M$ $M = 25\text{kgs}$ Jjuko's mass is 25kg				A <i>Units are needed</i>
45	a) Vena cava	<i>Venacava</i>	HB	The Circulatory system, P.7	A
	b) Deoxygenated blood / De-oxygenated blood				C
	c) Capillaries are many in number for fast exchange of body materials. // They have thin walls to allow easy diffusion of materials.				C
46	a)i) Flatworms		WOLT	Classification of animals, P.6	C
	ii) Roundworms/nematodes				C
	b) They improve soil drainage/water infiltration into the soil. // They improve the soil structure.// They aid decomposition of organic matter to release nutrients in the soil. // They breakdown organic matter to form soil. // They soften the soil to improve young plants root penetration. // They help to mix soil.	<i>The die to form humus.</i>			A <i>Man can't wait for earthworms to die to benefit from them.</i>
47	a) Soil drainage	<i>Soil texture</i>	ENV'T	Soil, P.4	A
	b) Prevents soil particles from falling into the beaker. // Filters soil from water.// Prevents soil particles from pouring in the water in the beaker.	<i>Prevents soil from seeping downwards.</i>			A
	c) Sample A				C
	d) It has small soil pores which allow little water to drain through them. // Clay soil has closely packed soil				A

	particles which do not allow water to drain through them easily.					
48	a) Increases chances of blood pressure to the victim. //Stains/ discolours the teeth. // Leads to heart attack. // Leads to insomnia. // Leads to loss of appetite. // leads to self neglect. // Leads to dental cavities /Teeth destruction.//	<i>Leads to addiction</i>	CPFL	Population Health, P.7 &	A	
	b) By engaging in gainful activities like farming. //Keeping busy in healthy games and sports like football.// Joining good peer groups. // Reporting peers who chew Miraa to responsible adults. // Joining reading groups.				C	
49	I) Prevents fruits from rotting. II) Conserves soil moisture. III) Prevents overcrowding of plants. IV) Removes unwanted plants.		ENV'T	Growing crops, P.5	C	
50	a) i) Animal dispersal	<i>Any other method// Animals</i>	WOLT	Classification. <b>Sub topic:</b> Fruit & seed dispersal, P.6	C	<i>Animals, water are agents of dispersal and not methods of seed dispersal.</i>
	ii) Water dispersal	<i>Any other method // Water</i>			C	
	b) Prevents overcrowding of plants around mother plant. //Allows plants to colonise new areas. // Increases chances of survival of plants. // Prevents extinction of plant species.// Reduces competition for water and mineral salts among plants.				C	
51	a) Left bronchus / Bronchus		HH	Respiratory system <b>Sub topic:</b> Respiratory organs, P.7	K	
	b) Rings of cartilage /Cartilage				K	
	c) It is where exchange of gases takes place.				C	
	d) It contracts and flattens. / Moves downwards and flattens.				C	
52	a) Gas state/ Gaseous state // Liquid state	<i>Liquids//Gases</i>	M&E	Heat Energy <b>Sub Topic:</b> Heat transfer, P.5	C	
	b) Convection helps in boiling water.// Enables us to get fresh air in a living room. // Helps to drive out smoke from the kitchen through the chimney.//Helps in formation of land and sea breezes leading to rain formation. //Drives away used air from an environment.	<i>Helps to roast meat // Helps to cook/iron</i>			A	
53	a) i) <b>Agroforestry</b> is the practice of growing crops with				C	

	compatible tree species and rearing of animals on the same piece of land at the same time. / This is the growing of crops, trees and rearing of animals on the same piece of land. / Is the growing of crops alongside trees. <b>ii) Mixed cropping</b> is the growing of two or more crops on the same piece of land at the same time. / The growing of two or more crops on the same piece of land at the same time.		WOLT	Interdependence, P.7		
	<b>b)</b> Should be fast maturing. // Should be leguminous. / Should be able to fix nitrogen in the soil. // Should be multipurpose. // Should have a light canopy.// Should be deep rooted to utilize nutrients from deeper soil layers. // Should not compete with crops for nutrients.		WOLT		C	
<b>54</b>	<b>i)</b> Measure one litre of boiled water into a clean container. <b>ii)</b> Measure one leveled teaspoon of salt into the measured water. <b>iii)</b> Measure eight teaspoons of sugar into the measured water. <b>iv)</b> Stir the mixture to form a uniform solution.	<i>Any other jumbled procedure.</i>	CPFL	Population & Health, P.7	A	<i>Jumbled procedure leads to loss of marks. // Not including "Stir" leads to loss of marks.</i>
<b>55</b>	<b>a)</b> Crushed Bones/ Bone Meal // Crushed Mukene fish// Crushed eggshells // Crushed Oyster shells		SHAO	Keeping poultry and bees, P.5	C	
	<b>b)</b> Feeding layers on balanced diet. // Proper housing of layers. // Regular control of parasites. // Using improved breeds of layers. // Selective breeding of layers on the farm. // Proper vaccination of layers.// Treating sick birds. // Provision of adequate light. // Providing layers with water ad lib. // De-beaking to prevent egg eating.		SHAO	Keeping poultry and bees, P.5	A	

### KEY TO ABBREVIATIONS OF THEMES

**CPFL** - COMMUNITY POPULATION & FAMILY LIFE    **ENV'T**-ENVIRONMENT    **HB**-HUMAN BODY    **HH**-HUMAN HEALTH  
**MC**-MANAGING CHANGES IN THE ENV'T    **M&E** - MATTER & ENERGY    **WOLT**-WORLD OF LIVING THINGS  
**SHAO**-SCIENCE IN HUMAN ACTIVITY & OCCUPATION

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**BELOW ARE SOME OF THE RESOURCEFUL TEACHERS  
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