Republic of the Philippines
Department of Education
REGION III – CENTRAL LUZON
SCHOOLS DIVISION OF CITY OF MABALACAT
BENIGNO "NINOY" AQUINO HIGH SCHOOL

FIRST TERM EXAMINATION IN SCIENCE 6
SY 2026–2027 (MATATAG CURRICULUM)

Name: _____ Grade & Section: _____ Score: _____ / 40
Teacher: _____ Date: _____ Parent's Sig: _____

PRESCRIBED FORMAT FOR THE TABLE OF SPECIFICATIONS (TOS)

No.	Learning Competencies	No. of Days Taught	Percentage (%)	No. of Items	Bloom's Taxonomy (Cognitive Level)					
					Easy (30%)		Average (60%)		Difficult (10%)	
					Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
1	1. Apply the features of a fair test: a. change one factor, b. measure one factor, and c. keep all other factors the same.	3	15%	6	1	1	2	1	1	0
2	2. Recognize the features of a fair test and that scientific investigations also involve a)	3	15%	6	1	1	2	2	0	0

	doing at least three trials/replication, and b) observing, measuring, and recording accurately.									
3	3. Identify from pictures/ diagrams the parts of the circulatory system as heart, blood, and blood vessels, and describe how they work.	4	20%	8	2	2	2	2	0	0
4	4. Describe the different ways that plants reproduce, such as pollination, seed production, and plant propagation.	3	15%	6	1	1	2	2	0	0
5	5. Plan a simple scientific investigation that includes fair test, replication, and accurate measurement for plant propagation	4	20%	8	0	0	2	3	1	2

	(cutting, budding, layering, grafting).									
6	6. Describe the differences between animals with a backbone (vertebrates) and without backbones (invertebrates) using common local examples.	3	15%	6	1	1	2	2	0	0
	Total	**20**	**100%**	**40**	**6**	**6**	**12**	**12**	**2**	**2**

GENERAL DIRECTIONS: Read each item carefully. Select the letter corresponding to the correct answer and write it on the space provided before each number.

_____ 1. In a scientific experiment, why is it crucial to change only ONE factor (independent variable) at a time?

A. To speed up the time required to complete the experiment.

B. To make sure any observed change is caused solely by that specific factor.

C. To allow multiple students to measure different things simultaneously.

D. To ensure that all equipment used remains clean and reusable.

_____ 2. Clarissa wants to determine which brand of plant fertilizer makes tomato plants grow tallest. What is the variable she should CHANGE?

A. The amount of water given to each plant

B. The amount of sunlight received daily

C. The brand of fertilizer applied

D. The height of the tomato plants measured after two weeks

_____ 3. In Clarissa's fertilizer experiment, what is the variable she should MEASURE?

A. The type of soil used in each pot

B. The height of the tomato plants in centimeters

C. The price of each fertilizer brand

D. The size of the flower pots

_____ 4. Which of the following factors MUST be kept constant (controlled) in an experiment testing how water amount affects seed germination?

A. The amount of water added to each dish

B. The size of the seeds and type of soil used

C. The rate at which the seed grows each day

D. The final stem length recorded after one week

_____ 5. Mark tests how temperature affects salt dissolution in water. He uses hot water with coarse salt in Pot A, and cold water with fine salt in Pot B. Why is his test UNFAIR?

A. He did not measure the time with a digital stopwatch.

B. He changed two factors at once: water temperature and salt grain size.

C. He should have used sugar instead of salt.

D. He tested both hot and cold water in the same trial.

_____ 6. An investigator evaluates four liquid detergents to see which removes oil stains best from cotton cloth. Which setup demonstrates a fair test?

A. Different cloth materials, same detergent volume, different washing times.

B. Same cotton cloth size, same stain size, same washing time, different detergent brands.

C. Different stain sizes, different washing times, same detergent brand.

D. Same cotton cloth, different stain types, different water temperatures.

_____ 7. Why do scientists perform at least THREE TRIALS (replication) during an experiment?

A. To make the scientific report longer and more impressive.

B. To reduce the effect of random experimental errors and confirm consistency.

C. To ensure all laboratory equipment gets equal usage.

D. To satisfy requirement guidelines set by school administrators.

_____ 8. During a 5-day observation of plant stem growth, when is the correct time to record the daily measurement?

A. At the end of the week, by estimating average growth.

B. Immediately after taking the measurement at the exact scheduled time each day.

C. Only on the first day and last day of the experiment.

D. Whenever the student remembers to measure it during free time.

_____ 9. A student recorded the following plant heights across three identical trials: Trial 1 = 12 cm, Trial 2 = 12.5 cm, Trial 3 = 12.2 cm. What does this indicate?

A. The experiment is inaccurate and must be discarded.

B. The measurement results are reliable due to consistent replication.

C. The plant stopped growing after Trial 1.

D. Different plants were used in each trial.

_____ 10. Which tool should a student use to accurately record the volume of liquid absorbed by a plant stem?

A. A standard wooden ruler

B. A graduated cylinder measured at eye level (meniscus)

C. A digital kitchen weighing scale

D. A glass thermometer

_____ 11. What mistake is made if a student measures temperature using a thermometer touched directly against the hot glass bottom of a beaker rather than suspended in the liquid?

A. It causes accurate calibration.

B. It introduces measurement error by reading glass temperature instead of liquid temperature.

C. It speeds up the trial process.

D. It replaces the need for doing multiple trials.

_____ 12. Complete the statement: High accuracy in recording data combined with multiple experimental trials results in _____.

A. lower scientific validity

B. reliable and trustworthy scientific conclusions

C. guaranteed hypothesis confirmation regardless of facts

D. elimination of the need for controlled variables

_____ 13. Which organ serves as the main muscular pump of the human circulatory system?

A. Lungs

B. Heart

C. Brain

D. Liver

_____ 14. Which blood components are responsible for transporting oxygen from the lungs to the rest of the body?

A. White blood cells (Leukocytes)

B. Red blood cells (Erythrocytes)

C. Platelets (Thrombocytes)

D. Blood plasma

_____ 15. What type of blood vessel carries oxygen-rich blood AWAY from the heart to body tissues?

A. Veins

B. Arteries

C. Capillaries

D. Lymphatic vessels

_____ 16. Which tiny, thin-walled blood vessels allow the actual exchange of gases, nutrients, and wastes between blood and body cells?

A. Arteries

B. Veins

C. Capillaries

D. Vena Cava

_____ 17. How do blood vessels and the heart work together during physical exercise?

A. The heart slows down to rest, while blood vessels contract.

B. The heart pumps faster and stronger to supply oxygenated blood rapidly to working muscles.

C. Blood vessels close completely to keep blood inside the heart.

D. Red blood cells stop carrying oxygen to conserve energy.

_____ 18. What is the primary function of white blood cells in the circulatory system?

A. To form blood clots and stop bleeding at wound sites

B. To defend the body against infections and foreign pathogens

C. To carry carbon dioxide back to the lungs

D. To give blood its characteristic red color

_____ 19. Trace the correct pathway of oxygen-poor blood as it returns from the body back to the heart and lungs:

A. Body -> Veins -> Right atrium -> Right ventricle -> Pulmonary artery -> Lungs

B. Lungs -> Left atrium -> Left ventricle -> Aorta -> Body

C. Body -> Arteries -> Left ventricle -> Right atrium -> Lungs

D. Heart -> Capillaries -> Aorta -> Veins -> Lungs

_____ 20. Why are valves present inside human veins and within heart chambers?

A. To increase blood pressure to maximum levels

B. To prevent the backward flow (backflow) of blood

C. To filter out bacterial cells from blood plasma

D. To separate red blood cells from white blood cells

_____ 21. Which structure in flowering plants develops into a seed after successful fertilization?

A. Stamen

B. Ovule

C. Petal

D. Sepal

_____ 22. What process occurs when pollen grains are transferred from the anther to the sticky stigma of a flower?

A. Germination

B. Pollination

C. Transpiration

D. Photosynthesis

_____ 23. Which of the following is an example of NATURAL vegetative plant propagation?

A. Growing a new katakataka (leaf of life) plant from leaf margins

B. Performing stem grafting on mango trees

C. Planting commercial seeds bought from a farm store

D. Hand-pollinating orchid flowers in a greenhouse

_____ 24. How do non-flowering plants like ferns and mosses reproduce without seeds?

A. Through bulb propagation

B. By producing microscopic spores

C. Through insect pollination

D. By root grafting

_____ 25. What role do pollinators like honeybees, butterflies, and sunbirds play in seed production?

A. They eat flower petals to release seeds.

B. They transfer pollen between flowers while gathering nectar.

C. They carry mature seeds to new soil locations.

D. They protect plant roots from underground pests.

_____ 26. What distinguishes sexual plant reproduction from asexual plant reproduction?

A. Sexual reproduction involves seeds/fusion of sex cells; asexual involves vegetative structures.

B. Sexual reproduction requires no water; asexual reproduction requires soil.

C. Sexual reproduction produces exact clone offspring; asexual produces genetic variations.

D. Sexual reproduction occurs only in mosses; asexual occurs only in trees.

_____ 27. You plan an investigation to determine which propagation method (Stem Cutting vs. Layering) yields faster root growth in San Francisco plants. What is your INDEPENDENT variable?

A. The length of roots measured after 3 weeks

B. The type of plant propagation method used (Stem Cutting vs. Layering)

C. The amount of sunlight and water provided daily

D. The type of potting soil used in the containers

_____ 28. In your plant propagation experiment, what is the DEPENDENT variable that must be accurately measured?

A. The technique used to cut the stem

B. The number or length of new roots developed over time

C. The brand of pruning shears used

D. The location of the garden plot

_____ 29. To ensure a FAIR TEST when comparing Grafting versus Budding on calamansi stems, which factors must be KEPT CONSTANT?

A. Stem length, potting medium, water quantity, and sunlight exposure

B. Propagation method, cutting blade, water quantity, and stem thickness

C. Root growth length, fruit count, propagation method, and weather

D. Soil type, fertilizer brand, propagation method, and pot color

_____ 30. How can a student apply REPLICATION when planning an investigation on rose stem cuttings?

A. Prepare at least 5 stem cuttings under identical conditions for each test group.

B. Use 1 stem cutting for rose and 1 stem cutting for bougainvillea.

C. Measure the same stem cutting 10 times on the same morning.

D. Change the water amount every day for 5 straight days.

_____ 31. Which accurate measurement tool and unit should be specified in an investigation plan measuring root growth in marigold cuttings?

A. A graduated measuring tape in kilometers

B. A metric ruler in millimeters or centimeters

C. A glass measuring cup in fluid ounces

D. A laboratory balance in milligrams

_____ 32. Analyze this experimental plan: 'Group A cuttings receive 50mL water daily; Group B cuttings receive 200mL water daily and extra fertilizer.' Why is this plan flawed?

A. It lacks a clear measurement unit for root growth.

B. It changes two variables (water amount AND fertilizer) simultaneously.

C. It uses stem cuttings instead of seeds.

D. It includes too many plant samples.

_____ 33. A student hypothesizes that 'Grafting will have a higher success rate than air layering in hibiscus.' Which setup best tests this hypothesis?

A. 10 grafted stems and 10 air-layered stems exposed to identical soil and climate.

B. 1 grafted stem kept indoors and 5 air-layered stems kept outdoors.

C. 5 grafted stems watered daily and 5 air-layered stems given no water.

D. 20 grafted stems with different fertilizers and no air-layered stems.

_____ 34. You are designing an experimental data recording table for plant propagation. Which columns SHOULD be included?

A. Sample ID | Propagation Method | Date Planted | Daily Water (mL) | Root Length (cm)

B. Sample ID | Weather Forecast | Price of Plant | Market Sales

C. Student Name | School Address | Plant Name | Pot Color

D. Sample ID | Propagation Method | Leaf Color Code | Fertilizer Price

_____ 35. What fundamental anatomical structure separates vertebrate animals from invertebrate animals?

A. Presence of jointed legs

B. Presence of an internal backbone (vertebral column)

C. Presence of an outer shell or exoskeleton

D. Ability to live on land and in water

_____ 36. Which of the following groups consists ENTIRELY of vertebrate animals native to local Philippine ecosystems?

A. Maya bird, Tilapia, Carabao, Milkfish (Bangus), Tarsier

B. Earthworm, Jellyfish, Sea star, Carabao, Mosquito

C. Grasshopper, Snail, Milkfish, Frog, Crab

D. Spider, Centipede, Tilapia, Housefly, Lizard

_____ 37. Which of the following local Philippine animals is classified as an INVERTEBRATE?

A. Pawikan (Sea Turtle)

B. Alimango (Mud Crab)

C. Bayawak (Monitor Lizard)

D. Maya (Eurasian Tree Sparrow)

_____ 38. A student collects three organisms in a local garden: an earthworm, a garden snail, and a butterfly. How should these three organisms be classified?

A. All three are Vertebrates because they move actively.

B. All three are Invertebrates because they lack a backbone.

C. Earthworm and snail are vertebrates; butterfly is an invertebrate.

D. Earthworm is an invertebrate; snail and butterfly are vertebrates.

_____ 39. Compare a Tilapia (fish) and a Shrimp (crustacean). What key structural difference distinguishes them?

A. Tilapia has an endoskeleton with a backbone; Shrimp has an exoskeleton and no backbone.

B. Tilapia has no backbone; Shrimp has an internal backbone made of cartilage.

C. Both animals have internal backbones, but shrimp live in salt water.

D. Tilapia is an invertebrate; Shrimp is a vertebrate.

_____ 40. Why do hard-bodied invertebrates like beetles, crabs, and grasshoppers have an EXOSKELETON?

A. To replace the need for blood vessels and heart pump.

B. To provide structural support and body protection in place of an internal backbone.

C. To allow them to convert into vertebrates as they grow older.

D. To assist in seed pollination during flight.

ANSWER KEY & ITEM ANALYSIS GUIDE

Item No. & Key	Item No. & Key	Item No. & Key	Item No. & Key
Q1: B	Q11: B	Q21: B	Q31: B
Q2: C	Q12: B	Q22: B	Q32: B
Q3: B	Q13: B	Q23: A	Q33: A
Q4: B	Q14: B	Q24: B	Q34: A
Q5: B	Q15: B	Q25: B	Q35: B
Q6: B	Q16: C	Q26: A	Q36: A
Q7: B	Q17: B	Q27: B	Q37: B
Q8: B	Q18: B	Q28: B	Q38: B
Q9: B	Q19: A	Q29: A	Q39: A
Q10: B	Q20: B	Q30: A	Q40: B