Recruitment Test for the Post of Junior Science Teacher (BPS-14), School Education & Literacy Department, Government of Sindh, Question Paper-II — 2026 · Solved Past Paper

Body: Sindh Testing Service (STS) · **Post:** Recruitment Test for the Post of Junior Science Teacher (BPS-14), School Education & Literacy Department, Government of Sindh, Question Paper-II · **Year:** 2026 · **Questions:** 100 in the original paper — **98 solved and verified**, 2 excluded as defective (Q34, Q35) · **Price:** Free

> **How to use this paper:** each question shows the stem, the four options, and the correct answer. Click “Why each option?” under a question to see all four options explained — one question teaches four topics. General Knowledge answers are as of the 2026 sitting.

Source note: trickipoint.com scan of the original SIBA STS booklet, 'IBA JST PAST PAPER 11 APRIL 2026' (accessed 9 Nov 2026; 9 scanned pages, Q1–Q100). No printed key exists on the source scan; a previous reader's yellow highlighter marks are NOT a key. All answers rest on worked derivations, reference facts and standard textbook rules, checked independently. 2 PICK-ONE (Q10, Q43) and 2 DEFECTIVE-excluded (Q34, Q35 — no option is correct), decided by the assistant under the owner's 8 Nov 2026 delegation; the defective items are kept as numbered excluded records.

Question 1 English

English. Reading Comprehension (1–4). Passage for reading comprehension (Q1–Q4)

ssage and answer the questions at the end. Social media has changed the concept of community by opening up countless avenues for users to connect with the larger community. Through this virtual medium, community is no longer the immediate community in which we live; it has now expanded to include the entire world. Today, one has become a part of a global community. People in one part of the globe can actively engage with others across the globe. Also, it has opened new vistas for students and professionals, who can easily interact with their counterparts in any part of the world and exchange views on matters of mutual interest. Students can also easily interact with educators and researchers in any part of the world and gain from their knowledge and wisdom. Q1. In the age of social media, one becomes a part of a larger community if:

- A. One writes a letter to his relatives
- B. One sends an email to his boss
- C. One comments on a celebrity's Facebook post ✓ **Correct answer**
- D. One writes an essay on one's laptop

A. Wrong: writing a letter to relatives is one-to-one, not joining a larger community

B. Wrong: sending an email to one's boss is one-to-one, not joining a larger community

C. Correct: commenting on a celebrity's Facebook post is engaging with others across the globe — joining the larger, global community the passage describes

D. Wrong: writing an essay on one's laptop is solitary work, not joining a larger community

Question 2 English

English. (From the passage printed under Q1.) Based on the ideas of the passage, a student shares his research with scholars from other countries via social media. This shows that:

- A. Communication is primarily enhanced within one's own city
- B. Social networking extends communication to other communities ✓ **Correct answer**

- D. Social media restricts the interactions to friendships

A. Wrong: sharing research with scholars in other countries goes beyond one's own city

B. Correct: social networking extends communication to other communities — exactly what sharing research across countries shows

C. Wrong: the scholars are from other countries, not the same institution

D. Wrong: the passage shows social media widening interaction, not restricting it to friendships

Question 3 English

English. (From the passage printed under Q1.) According to the passage, which of the following is not discussed as a form of social media engagement?

- A. Academic interests
- B. Professional activities
- C. Political pursuits ✓ **Correct answer**
- D. Research activities

A. Wrong: academic interests are discussed — students interact with educators and researchers

B. Wrong: professional activities are discussed — professionals interact with their counterparts

C. Correct: political pursuits are not discussed anywhere in the passage

D. Wrong: research activities are discussed — students share research and interact with researchers

4 English

English. (From the passage printed under Q1.) The main idea of the passage is:

- A. The concept of community is different in the age of social media ✓ **Correct answer**
- B. Students can easily engage with educators and researchers globally
- C. Learners like using online learning over traditional classrooms
- D. In modern society, the only means of communication is through social media

A. Correct: the passage opens with its thesis — social media has changed the concept of community — and the whole passage develops it

B. Wrong: students engaging with educators globally is one example in the passage, not its main idea

C. Wrong: the passage never compares online learning with traditional classrooms

D. Wrong: the passage never says social media is the only means of communication

Question 5 English

English. Select the most appropriate meaning of the underlined word from the given choices. Rather than be involved in clandestine meetings, they did everything quite openly.

- A. Exposed
- B. Covert ✓ **Correct answer**
- C. Collaborative
- D. Open

A. Wrong: exposed is not the meaning of clandestine

B. Correct: clandestine means secret, hidden — covert

C. Wrong: collaborative is not the meaning of clandestine

oen is the opposite of clandestine

Question 6 English

English. Identify the adverb from the given sentence: They frequently go to library to study with friends. (The four underlined words in the sentence are: They / frequently / library / with.)

- A. They
- B. frequently ✓ **Correct answer**
- C. library
- D. with

A. Wrong: "They" is a pronoun, not an adverb

B. Correct: "frequently" tells how often they go — it is the adverb

C. Wrong: "library" is a noun, not an adverb

D. Wrong: "with" is a preposition, not an adverb

Question 7 English

English. He saw a movie. Change into Future Perfect Tense:

- A. He will have seen a movie ✓ **Correct answer**
- B. He will has seen a movie
- C. He will have been seen a movie
- D. He will have see a movie

A. Correct: the future perfect of "saw" is "will have seen"

B. Wrong: "will has seen" is ungrammatical — "has" cannot follow "will"

C. Wrong: "will have been seen" is passive and changes the meaning

D. Wrong: "will have see" is ungrammatical — the past participle "seen" is needed

8 English

English. Whose mobile did you use? Change the Voice:

- A. Whose mobile is used by you?
- B. Whose mobile was used by you? ✓ **Correct answer**
- C. Whose mobile is used by me?
- D. Whose mobile was used by me?

A. Wrong: "is used" is present passive, but the original is past

B. Correct: the past simple active "did you use" becomes the past simple passive "was used by you"

C. Wrong: the voice change keeps "you" as the agent, not "me"

D. Wrong: the voice change keeps "you" as the agent, not "me"

Question 9 English

English. Ahmed requested me to give him his pen. Change the Narration:

- A. Ahmed said to me, "give him my pen."
- B. Ahmed said to me, "Please give me my pen." ✓ **Correct answer**
- C. Ahmed said to me, "Please give him pen."
- D. Ahmed said to me, "Please give him his pen."

A. Wrong: the request is polite, so "Please" is needed, and "give him my pen" mixes the persons

B. Correct: Ahmed is the speaker, so in direct speech his pen is "my pen" and he says "Please give me my pen"

C. Wrong: "give him pen" has no article and the wrong person

D. Wrong: "give him his pen" would mean giving a third person's pen, not Ahmed's own

10 English

English. Identify the sentence with correct punctuation:

- A. Allama Iqbal the poet of the East, is famous for his poetry.
- B. Allama Iqbal, the poet of the East is famous for his poetry.
- C. Allama Iqbal, the poet of the East, is famous for his poetry. ✓ **Correct answer**
- D. Allama Iqbal, the poet of the East, is famous for his poetry.

A. Wrong: there is no comma after "Allama Iqbal" before the appositive phrase

B. Wrong: there is no comma after "the East" to close the appositive phrase

C. Correct (as filed): the appositive "the poet of the East" is correctly set off by commas on both sides — correct as filed, and identical to D as printed, so C is picked as the first of the two identical correct options

D. Correct (as filed): this is identical to C as printed and is equally correct — C is picked as the first of the two

Question 11 General Knowledge

General Knowledge. Identify the continent referred to as the 'Frozen Desert':

- A. Australia
- B. Antarctica ✓ **Correct answer**
- C. Europe
- D. Asia

A. Wrong: Australia is not called the Frozen Desert

B. Correct: Antarctica, covered in ice, is called the Frozen Desert

C. Wrong: Europe is not called the Frozen Desert

D. Wrong: Asia is not called the Frozen Desert

12 General Knowledge

General Knowledge. The continent is referred to as an 'island continent':

- A. Asia
- B. Africa
- C. Australia ✓ **Correct answer**
- D. Antarctica

A. Wrong: Asia is not an island continent

B. Wrong: Africa is not an island continent

C. Correct: Australia is the island continent — a continent that is also a single island landmass

D. Wrong: Antarctica is not called the island continent

Question 13 General Knowledge

General Knowledge. The value of imported goods (e.g., machinery, oil) is significantly higher than the value of exported goods (e.g., textiles, rice). This situation best describes a persistent problem known as: (Options as printed, with the scan's misspellings: A "National Date" for National Debt, B "Trade Defiell" for Trade Deficit.)

- A. National Date
- B. Trade Defiell ✓ **Correct answer**
- C. Inflation
- D. Low GDP

A. Wrong: a national debt is not what imports exceeding exports describes (the scan prints "National Date" for National Debt)

B. Correct: imports persistently exceeding exports is a trade deficit (the scan prints "Trade Defiell")

flation is a rise in prices, not imports exceeding exports

D. Wrong: a low GDP is not what imports exceeding exports describes

Question 14 General Knowledge

General Knowledge. The Suez Canal connects which two bodies of water: (The scan mislabels the third option "a." a second time; the options are filed a/b/c/d in order.)

- A. Pacific Ocean and Atlantic Coater
- B. Mediterranean Sea and Red Sea ✓ **Correct answer**
- C. Arabian Sea and Bay of Bengal
- D. Caribbean Sea and Gulf of Mexico

A. Wrong: the Pacific and Atlantic are joined by the Panama Canal, not the Suez Canal (the scan prints "Coater" for Coast)

B. Correct: the Suez Canal connects the Mediterranean Sea and the Red Sea

C. Wrong: the Arabian Sea and the Bay of Bengal are not joined by the Suez Canal

D. Wrong: the Caribbean Sea and the Gulf of Mexico are not joined by the Suez Canal

Question 15 General Knowledge

General Knowledge. The term 'scarcity' in economics is defined as:

- A. Having too many resources
- B. Abundance of goods
- C. No need to make choices
- D. Unlimited wants and limited resources ✓ **Correct answer**

A. Wrong: scarcity is the opposite of having too many resources

B. Wrong: abundance of goods is the opposite of scarcity

C. Wrong: scarcity is exactly what forces choices to be made

carcity is unlimited wants and limited resources

Question 16 General Knowledge

General Knowledge. The Water Apportionment Accord of 1991 deals with the distribution of water resources among:

- A. Pakistan and India
- B. Agricultural and industrial sectors
- C. Urban and rural areas
- D. The provinces of Pakistan ✓ **Correct answer**

A. Wrong: the 1991 Accord is not between Pakistan and India (that is the Indus Waters Treaty)

B. Wrong: the 1991 Accord does not divide water between sectors

C. Wrong: the 1991 Accord does not divide water between urban and rural areas

D. Correct: the Water Apportionment Accord of 1991 distributes water among the provinces of Pakistan

Question 17 General Knowledge

General Knowledge. The Muhammad Ali Bogra Formula was presented as a framework for:

- A. Economic development
- B. A federal constitution ✓ **Correct answer**
- C. Foreign policy
- D. Educational reform

A. Wrong: the Bogra Formula was not an economic development plan

B. Correct: the Muhammad Ali Bogra Formula (1953) was a framework for a federal constitution

e Bogra Formula was not a foreign policy

D. Wrong: the Bogra Formula was not an educational reform

Question 18 General Knowledge

General Knowledge. If a new national campaign successfully encourages the use of locally manufactured goods over imported luxury items, the most direct result will be:

- A. An improvement in the trade balance and support for domestic industries ✓ **Correct answer**
- B. A guaranteed increase in the country's literacy rate and employment ratio
- C. A change in the national budget deficit, leading to more unemployment among youth
- D. The immediate creation of a regional economic union

A. Correct: buying local goods instead of imports improves the trade balance and supports domestic industries

B. Wrong: a buy-local campaign does not guarantee a rise in the literacy rate

C. Wrong: a buy-local campaign does not cause more unemployment among youth

D. Wrong: a buy-local campaign does not create a regional economic union

Question 19 General Knowledge

General Knowledge. Analyze the functions of the United Nations organs and determine which is the most powerful in matters of international peace and security, explaining why:

- A. The General Assembly, because all member states have equal representation
- B. The Security Council, because its five permanent members have veto power ✓ **Correct answer**
- C. The International Court of Justice, because it settles legal disputes

Economic and Social Council, because it controls the UN's budget

A. Wrong: equal representation does not make the General Assembly the most powerful organ on peace and security

B. Correct: the Security Council is the most powerful UN organ on international peace and security, and its five permanent members hold the veto

C. Wrong: settling legal disputes is the Court's role, not the enforcement of peace and security

D. Wrong: the Economic and Social Council does not control the UN's budget, and it is not the peace-and-security organ

Question 20 General Knowledge

General Knowledge. The climatic region is characterized by severe winters, short cool summers, and vegetation like mosses and lichens is called:

- A. Equatorial Region
- B. Hot Desert Region
- C. Tundra Region ✓ **Correct answer**
- D. Mediterranean Region

A. Wrong: an equatorial region is hot and wet, not severe-wintered

B. Wrong: a hot desert region has no severe winters or mosses and lichens

C. Correct: severe winters, short cool summers, and mosses and lichens describe the tundra region

D. Wrong: a Mediterranean region has mild wet winters and hot dry summers, not mosses and lichens

21 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. Linking science lessons with the local ecosystem shows:

- A. Alignment
- B. Bloom's level
- C. Real-life link ✓ **Correct answer**
- D. Management

A. Wrong: alignment is matching lessons to the curriculum, not linking to the local ecosystem

B. Wrong: Bloom's level is a cognitive level, not a link to the local ecosystem

C. Correct: linking science lessons with the local ecosystem is a real-life link

D. Wrong: management is classroom management, not a link to the local ecosystem

Question 22 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. The ability of a teacher to maintain students' attention by changing voice, gestures, and activities is called:

- A. Stonforccesent
- B. Stimulas variation ✓ **Correct answer**
- C. Closure
- D. Explanation

A. Wrong: option A as printed ("Stonforccesent") is garbled beyond reading and is not the name of this skill

B. Correct: changing voice, gestures and activities to hold attention is stimulus variation (the scan prints "Stimulas variation")

C. Wrong: closure is ending a lesson, not holding attention by variety

explanation is explaining content, not holding attention by variety

Question 23 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. Smiles and praise show:

- A. Probing
- B. Reinforcement ✓ **Correct answer**
- C. Questioning
- D. Closure

A. Wrong: probing is asking follow-up questions, not smiling and praising

B. Correct: smiles and praise are reinforcement

C. Wrong: questioning is asking questions, not smiling and praising

D. Wrong: closure is ending a lesson, not smiling and praising

Question 24 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. The teacher explains, but students stay confused, which voices in a lack of?

- A. Probing
- B. Variation
- C. Clarity ✓ **Correct answer**
- D. Reinforcement

A. Wrong: probing is follow-up questioning, not what is lacking when an explanation confuses

B. Wrong: variation is variety in teaching, not what is lacking when an explanation confuses

C. Correct: if the teacher explains and students stay confused, the explanation lacks clarity

inforcement is praise and encouragement, not what is lacking when an explanation confuses

Question 25 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. The following teaching method uses real-life situations:

- A. Story Telling
- B. Lecturer
- C. Case Study ✓ **Correct answer**
- D. Demonstration

A. Wrong: story telling narrates a tale; it does not use real-life situations as its method

B. Wrong: a lecture is exposition, not the use of real-life situations (the scan prints "Lectizer")

C. Correct: a case study uses real-life situations for learning

D. Wrong: a demonstration shows a process; it is not the method built on real-life situations

Question 26 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. Internal communications within institutions are done through:

- A. LAN ✓ **Correct answer**
- B. EBB
- C. WAN
- D. MMS

A. Correct: a local area network (LAN) carries internal communication within an institution

B. Wrong: option B as printed ("EBB") is not a network used for internal communication

wide area network (WAN) links distant places, not internal communication within one institution

D. Wrong: MMS is multimedia messaging, not an institutional internal network

Question 27 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. Emotional self-regulation develops significantly during:

- A. Infancy
- B. Early Childhood
- C. Adolescence ✓ **Correct answer**
- D. Late Adulthood

A. Wrong: infancy is when basic regulation begins, not when it develops most significantly in the textbook sense of this item

B. Wrong: early childhood builds basic regulation, but the significant development named in this item is adolescence

C. Correct: emotional self-regulation develops significantly during adolescence, as the prefrontal cortex matures

D. Wrong: late adulthood is not when emotional self-regulation develops significantly

Question 28 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. According to Piaget, the stage in which children begin to think logically about concrete events is called:

- A. Sensorimotor
- B. Preoperational
- C. Concrete Operational ✓ **Correct answer**
- D. Formal Operational

e sensorimotor stage is birth to about 2 years, before logical thought

B. Wrong: the preoperational stage precedes logical thought about concrete events (the scan prints "Propperational")

C. Correct: in the concrete operational stage children begin to think logically about concrete events

D. Wrong: the formal operational stage is logical thought about abstract ideas, not concrete events

Question 29 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. Performance assessment requires students to demonstrate knowledge and skills, including the processes they use to solve problems. Which of the following is not an example of performance assessment?

- A. Demonstration
- B. Achievement Tests ✓ **Correct answer**
- C. Science Exhibition
- D. Academic Portfolio

A. Wrong: a demonstration is a performance assessment

B. Correct: an achievement test is a written test, not a performance assessment (the scan prints "Achievement Tesls")

C. Wrong: a science exhibition is a performance assessment (the scan prints "Science Edhilation")

D. Wrong: an academic portfolio is a performance assessment

Question 30 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. A teacher notices a student excels in lab experiments.

- A. Increase special demonstration ✓ **Correct answer**
- B. Provide more differents
- C. Assign more readings
- D. Play audio lectures

A. Correct: more special demonstrations extend the lab learning in which the student excels (the scan prints "specicial demoentament")

B. Wrong: option B as printed ("Provide more differents") is garbled beyond reading

C. Wrong: more readings do not support a student who excels in practical lab work

D. Wrong: audio lectures do not support a student who excels in practical lab work

Question 31 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. Two adolescents respond differently to the same peer pressure situation. This suggests differences in:

- A. Cognitive growth
- B. Social coping skills ✓ **Correct answer**
- C. Reflexes
- D. Sentory perception

A. Wrong: cognitive growth alone does not explain different responses to the same peer pressure

B. Correct: different responses to the same peer pressure show differences in social coping skills

C. Wrong: reflexes are automatic physical responses, not responses to peer pressure

D. Wrong: sensory perception is about the senses, not about handling peer pressure (the scan prints "Sentory perception")

32 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. The following best defines a Student Learning Outcome:

- A. A list of teaching activities
- B. A broad curriculum standard
- C. A specific statement of what a student will achieve ✓ **Correct answer**
- D. An assessment strategy

A. Wrong: a student learning outcome is not a list of teaching activities

B. Wrong: a student learning outcome is not a broad curriculum standard

C. Correct: a student learning outcome is a specific statement of what a student will achieve

D. Wrong: a student learning outcome is not an assessment strategy

Question 33 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. If a teacher assigns a lesson plan of Engineering + Visual Arts, which STEAM skills are applied here?

- A. A list of personal and interpersonal skills
- B. Broad building skills
- C. Problem-solving and creativity skills ✓ **Correct answer**
- D. An assessment skills

A. Wrong: a list of personal and interpersonal skills is not what an Engineering + Visual Arts lesson applies

B. Wrong: broad building skills is too vague to be the STEAM answer

C. Correct: an Engineering + Visual Arts lesson applies problem-solving and creativity skills (the scan prints "Specifim-solving")

assessment skills are not what this lesson applies

Question 34 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. If is tech method is lesson plan and of Egineering during a PBL project is: (Stem as printed — garbled beyond recovery; see the note on this question.)

- A. Interporessional test sceets
- B. Team buildment and reflection portfolios
- C. Problem-solving and creativity
- D. Collaboortive

No answer is given for this question, and none is taught. DEFECTIVE — no option is correct (DEFECTIVE-excluded)

A. Wrong: the stem as printed asks nothing determinable, so no option can be verified as correct — the item is excluded as defective

B. Wrong: the stem as printed asks nothing determinable, so no option can be verified as correct — the item is excluded as defective

C. Wrong: the stem as printed asks nothing determinable, so no option can be verified as correct — the item is excluded as defective

D. Wrong: the stem as printed asks nothing determinable, so no option can be verified as correct — the item is excluded as defective

Question 35 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. The best method to assess students' collaboration and a PBL project is: (Numbered "34" a second time in the scan; the option columns are scrambled with duplicate letters; see the note on this question.)

- A. A combination of numbers and alphabets

philosophy of emotional intelligence

- C. A thinking with tech
- D. A Digital Circuits Theory

No answer is given for this question, and none is taught. DEFECTIVE — no option is correct (DEFECTIVE-excluded)

A. Wrong: no printed option is a coherent method for assessing collaboration, and the option columns are scrambled with duplicate letters — the item is excluded as defective

B. Wrong: no printed option is a coherent method for assessing collaboration, and the option columns are scrambled with duplicate letters — the item is excluded as defective

C. Wrong: no printed option is a coherent method for assessing collaboration, and the option columns are scrambled with duplicate letters — the item is excluded as defective

D. Wrong: no printed option is a coherent method for assessing collaboration, and the option columns are scrambled with duplicate letters — the item is excluded as defective

Question 36 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. The following statements are about formative assessment, EXCEPT:

- A. It is used to assign marks and grades at the end of a term or year ✓ **Correct answer**
- B. It is used to revise written drafts based on the feedback
- C. It is used to assess student progress during learning
- D. It is used to provide provision to improve teaching and learning

A. Correct: assigning marks and grades at the end of a term or year is summative assessment, not formative — this is the exception

B. Wrong: revising drafts on feedback is a use of formative assessment

sessing progress during learning is the purpose of formative assessment

D. Wrong: providing information to improve teaching and learning is a use of formative assessment (the scan prints "provdation")

Question 37 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. Effective feedback should be:

- A. Specific, family, and actionable ✓ **Correct answer**
- B. Given only on summative assessments
- C. Comparative ranking of students against each other
- D. Primarily positive to avoid hurting students' feelings

A. Correct: effective feedback is specific, timely and actionable (the scan prints "Specific, family, and actionable" — "family" is the scan's garble for "timely")

B. Wrong: effective feedback is given throughout learning, not only on summative assessments

C. Wrong: comparative ranking is not effective feedback

D. Wrong: effective feedback is honest and constructive, not merely positive

Question 38 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. After returning graded essays, a teacher dedicates class time for students to read the feedback and set one specific goal for their next writing assignment. This strategy is effective because it:

- A. Takes less time than the teacher writing comments
- B. Ensures that students actually process the feedback and take ownership of their improvement ✓ **Correct answer**
- C. Allows the teacher to avoid difficult conversations with students
- D. Is a fun activity that breaks up the routine

e strategy is not about saving the teacher time

B. Correct: dedicated time for students to read feedback and set a goal ensures they actually process the feedback and take ownership of their improvement

C. Wrong: the strategy is not about avoiding difficult conversations

D. Wrong: the strategy is not a fun break from routine

Question 39 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. The right classroom management plan does all, EXCEPT:

- A. Provides opportunities for social learning
- B. Provides opportunities for academic learning
- C. Provides opportunities for intrapersonal learning
- D. Provides opportunities for domestic learning ✓ **Correct answer**

A. Wrong: a good classroom management plan does provide opportunities for social learning

B. Wrong: a good classroom management plan does provide opportunities for academic learning

C. Wrong: a good classroom management plan does provide opportunities for intrapersonal learning

D. Correct: domestic learning is not something a classroom management plan provides — this is the exception

Question 40 Teaching & Learning Pedagogies

Teaching & Learning Pedagogies. During group work, a student consistently dominates the conversation and dismisses others' ideas. Which of the following is the most

rategy to address this?

- A. Assign specific, rotating roles to each group member ✓ **Correct answer**
- B. Allow the group members to resolve the conflict on their own
- C. Separate the student from the group and have them work independently
- D. Warning the student publicly to show other students the consequences of such behaviour

A. Correct: assigning specific, rotating roles gives every member a part and stops one student dominating — the proactive strategy

B. Wrong: leaving the group to resolve it is not proactive

C. Wrong: separating the student is reactive and removes the student from learning

D. Wrong: warning the student publicly is punitive, not proactive

Question 41 Biology

Biology. The organelle that acts as a 'suicide bag' of the cell is:

- A. Peroxisome
- B. Lysosome ✓ **Correct answer**
- C. Dictyosome
- D. Glyoxisome

A. Wrong: a peroxisome breaks down hydrogen peroxide; it is not the suicide bag

B. Correct: the lysosome, full of digestive enzymes, is called the suicide bag of the cell

C. Wrong: a dictyosome is part of the Golgi apparatus, not the suicide bag

D. Wrong: a glyoxisome is found in plant seeds, not the suicide bag

Question 42 Biology

Biology. In case of failed kidneys, the dialysis machine performs the function of:

- B. Excretion ✓ **Correct answer**
- C. Reproduction
- D. Circulation

A. Wrong: a dialysis machine does not digest food

B. Correct: a dialysis machine removes waste from the blood — the function of excretion, which failed kidneys can no longer perform

C. Wrong: a dialysis machine has nothing to do with reproduction

D. Wrong: a dialysis machine does not circulate blood as its function

Question 43 Biology

Biology. A student prepares a slide of carrot root and observes a prominent large vacuole under the microscope. This shows that the cell is of a/an:

- A. Eukaryote
- B. Virus
- C. Animal
- D. Plant ✓ **Correct answer**

A. Correct (as filed): a carrot root cell is indeed a eukaryote, so this is also true — but the large vacuole is the feature that identifies it as a plant cell rather than an animal cell, so D is picked as the answer the item tests

B. Wrong: a virus has no vacuole and no cell structure

C. Wrong: animal cells do not have a prominent large central vacuole

D. Correct (as filed): a prominent large central vacuole is the plant-cell feature — correct as filed, and the answer the item tests

44 Biology

Biology. In an experiment, a scientist replaces the energy source from glucose to fatty acid; the stage of respiration directly affected is:

- A. NADP synthesis
- B. Glycolysis ✓ **Correct answer**
- C. Krebs Cycle
- D. Electron transport chain

A. Wrong: NADP synthesis is not a stage of respiration affected by replacing glucose

B. Correct: glucose is broken down in glycolysis; fatty acids bypass glycolysis, so glycolysis is the stage directly affected

C. Wrong: fatty acids still feed the Krebs cycle through acetyl-CoA, so it is not the stage directly affected

D. Wrong: the electron transport chain still runs on the products of the Krebs cycle

Question 45 Biology

Biology. A student observes an amoeba under the microscope engulfing the provided food particles. This shows that protists are:

- A. Only autotrophic
- B. Saprophyte
- C. Macroscopic
- D. Capable of heterotrophic nutrition ✓ **Correct answer**

A. Wrong: an amoeba engulfing food is feeding heterotrophically, not autotrophically

B. Wrong: engulfing food particles is not saprophytic feeding on decaying matter

C. Wrong: an amoeba is microscopic, not macroscopic

D. Correct: an amoeba engulfing food particles shows protists are capable of

Question 46 Biology

Biology. A small population endemic to an island faces a sudden disaster that wiped 90% of the population. Such phenomena is called:

- A. Bottleneck effect ✓ **Correct answer**
- B. Founder effect
- C. Divergent radiation
- D. Adaptive radiation

A. Correct: a sudden disaster wiping out most of a population, leaving a small surviving group, is the bottleneck effect

B. Wrong: the founder effect is a small group starting a new population elsewhere, not a disaster wiping out most of one

C. Wrong: divergent radiation is one lineage splitting into many, not a population crash

D. Wrong: adaptive radiation is diversification into many niches, not a population crash

Question 47 Biology

Biology. In an experiment of an enzymatic reaction, the addition of chemical X, structurally similar to the substrate, halts the product formation. The same reaction is restored by increasing substrate concentration. This best explains:

- A. Competitive inhibition ✓ **Correct answer**
- B. Noncompetitive inhibition
- C. Allosteric activation
- D. Active activation

A. Correct: a chemical similar to the substrate competes for the active site, and more substrate restores the reaction — competitive inhibition

oncompetitive inhibition cannot be overcome by adding more substrate

C. Wrong: allosteric activation increases the reaction, it does not halt it

D. Wrong: "active activation" is not a standard term, and activation does not halt product formation

Question 48 Biology

Biology. Lamarckism is best explained as:

- A. Change is driven by the struggle for existence
- B. Acquired characters are determined by genetic makeup
- C. Mutations drive variation
- D. Inheritance is affected by the use and disuse of organs ✓ **Correct answer**

A. Wrong: struggle for existence is Darwin's idea, not Lamarck's

B. Wrong: acquired characters being determined by genetic makeup is not Lamarckism

C. Wrong: mutations driving variation is the modern synthesis, not Lamarckism

D. Correct: Lamarckism is the inheritance of acquired characters through the use and disuse of organs

Question 49 Biology

Biology. A karyotype of a newborn with Down syndrome shows an error in gamete formation. This observed condition is most likely the result of:

- A. Improper segregation of homologous chromosomes ✓ **Correct answer**
- B. Crossing over between non-sister chromatids
- C. Improper cytokinesis between 2 phases of meiosis
- D. Alteration in cell division checkpoints

A. Correct: Down syndrome is caused by nondisjunction — the improper segregation of

chromosomes in meiosis, giving an extra chromosome 21

B. Wrong: crossing over exchanges segments; it does not produce an extra chromosome

C. Wrong: improper cytokinesis does not produce trisomy 21

D. Wrong: altered checkpoints can cause cancer, not Down syndrome

Question 50 Biology

Biology. During a field trip in a desert ecosystem, researchers observed a decline in the population of secondary consumers (snakes). The most likely consequence will be:

- A. Increase in the population of primary consumers ✓ **Correct answer**
- B. Decrease in the population of primary consumers
- C. No effect on the population of primary consumers
- D. Termination of the population of primary consumers

A. Correct: fewer snakes means less predation on primary consumers, so their population increases

B. Wrong: fewer predators would not decrease the prey population

C. Wrong: removing predators does affect the prey population

D. Wrong: a decline in snakes does not terminate the primary consumers

Question 51 Biology

Biology. The correct sequence of urinary excretion is:

- A. Kidneys, then Ureter, then Urethra, then Urinary Bladder
- B. Kidneys, then Urinary Bladder, then Ureter, then Urethra
- C. Kidneys, then Ureter, then Urinary Bladder, then Urethra ✓ **Correct answer**
- D. Kidneys, then Urethra, then Ureter, then Urinary Bladder

A. Wrong: urine does not go from the ureter to the urethra before the bladder

urine does not go to the bladder before the ureter

C. Correct: urine flows: kidneys, then ureter, then urinary bladder, then urethra

D. Wrong: urine does not reach the urethra before the ureter and bladder

Question 52 Biology

Biology. The temperature beyond optimum reduces the enzyme's function because:

- A. It increases substrate bonding
- B. It alters the enzyme's structure ✓ **Correct answer**
- C. It reduces ATP production
- D. It accelerates substrate-product complex formation

A. Wrong: heat beyond the optimum does not increase substrate bonding

B. Correct: heat beyond the optimum denatures the enzyme — it alters the enzyme's structure

C. Wrong: reducing ATP production is not why heat reduces enzyme function

D. Wrong: heat beyond the optimum does not accelerate complex formation

Question 53 Chemistry

Chemistry. Which method can be used to separate a mixture of salt and water to obtain both parts of the mixture?

- A. Crystallization
- B. Distillation ✓ **Correct answer**
- C. Evaporation
- D. Filtration

A. Wrong: crystallization recovers the salt, not the water

B. Correct: distillation recovers both the water (as distillate) and the salt (left behind)

aporation recovers the salt but loses the water as vapour

D. Wrong: filtration cannot separate dissolved salt from water

Question 54 Chemistry

Chemistry. Work done by a thermodynamic system is a state function:

- A. True
- B. False ✓ **Correct answer**
- C. Only sometimes
- D. Maximum time

A. Wrong: work is not a state function — it depends on the path taken

B. Correct: work is a path function, not a state function, so the statement is false

C. Wrong: work is never a state function

D. Wrong: "maximum time" is not a property of work

Question 55 Chemistry

Chemistry. Electricity is passed through concentrated aqueous Sodium Chloride. Inert electrodes are used: (A diagram shows a U-tube of concentrated NaCl(aq) with inert electrodes.) What is formed at the negative electrode?

- A. Chlorine
- B. Oxygen
- C. Hydrogen ✓ **Correct answer**
- D. Sodium

A. Wrong: chlorine is formed at the positive electrode, not the negative

B. Wrong: oxygen is not formed at the negative electrode in concentrated brine

C. Correct: at the negative electrode (cathode), hydrogen ions are reduced and hydrogen

D. Wrong: sodium ions stay in solution; sodium metal is not formed in aqueous solution

Question 56 Chemistry

Chemistry. Burning fossil fuels releases heat energy. Which substance is not a fossil fuel?

- A. Coal
- B. Hydrogen ✓ **Correct answer**
- C. Natural gas
- D. Petroleum

A. Wrong: coal is a fossil fuel

B. Correct: hydrogen is not a fossil fuel

C. Wrong: natural gas is a fossil fuel

D. Wrong: petroleum is a fossil fuel

Question 57 Chemistry

Chemistry. What is the maximum mass of Chromium Cr that can be obtained from 76g of Chromium (III) oxide, Cr2O3?

- A. 48g
- B. 52g ✓ **Correct answer**
- C. 104g
- D. 152g

A. Wrong: 48g is not the mass of chromium in 76g of Cr2O3

B. Correct: the relative formula mass of Cr2O3 is 152, so 76g is half a mole, giving 2 x 0.5 x 52 = 52g of chromium

C. Wrong: 104g is the mass of chromium in a full mole of Cr2O3, not in 76g

152g is the mass of one mole of Cr2O3 itself

Question 58 Chemistry

Chemistry. Which of the following is an example of a neutral salt?

- A. NaCl ✓ **Correct answer**
- B. Na2CO3
- C. CH3COONa
- D. NH4Cl

A. Correct: sodium chloride is a neutral salt — neither acidic nor basic

B. Wrong: sodium carbonate is a basic salt

C. Wrong: sodium ethanoate is a basic salt

D. Wrong: ammonium chloride is an acidic salt

Question 59 Chemistry

Chemistry. Which of the statement(s) below is/are true? 1 Elements in the same group have the same number of electrons. 2 Elements in the same group have similar chemical reactions. 3 Elements in the same group have different mass and proton numbers.

- A. 1, 2 and 3
- B. Only 1 and 2
- C. Only 2 and 3 ✓ **Correct answer**
- D. Only 1

A. Wrong: statement 1 is false — elements in a group have the same number of outer-shell electrons, not the same total number

B. Wrong: statement 1 is false, so this combination cannot be right

C. Correct: statement 2 is true and statement 3 is true, while statement 1 is false — only 2

D. Wrong: statement 1 alone is false

Question 60 Chemistry

Chemistry. Magnesium, Phosphorus and Chlorine are elements in the same period of the Periodic Table. Which row describes the type of oxide formed by each of these elements? (Rows: Magnesium | Phosphorus | Chlorine. A: acidic | acidic | basic. B: acidic | basic | basic. C: basic | acidic | acidic. D: basic | basic | acidic.)

- A. Magnesium: acidic, Phosphorus: acidic, Chlorine: basic
- B. Magnesium: acidic, Phosphorus: basic, Chlorine: basic
- C. Magnesium: basic, Phosphorus: acidic, Chlorine: acidic ✓ **Correct answer**
- D. Magnesium: basic, Phosphorus: basic, Chlorine: acidic

A. Wrong: magnesium oxide is basic, not acidic

B. Wrong: magnesium oxide is basic and phosphorus oxide is acidic, not the reverse

C. Correct: magnesium oxide is basic, phosphorus oxide is acidic, and chlorine oxide is acidic

D. Wrong: phosphorus oxide is acidic, not basic

Question 61 Chemistry

Chemistry. Electronegativity increases:

- A. Down the group
- B. Left to right in a period ✓ **Correct answer**
- C. Increases with the gain of electrons
- D. Does not change from top to bottom in group

A. Wrong: electronegativity decreases down a group

electronegativity increases left to right across a period

C. Wrong: electronegativity is a trend, not something that increases with the gain of electrons

D. Wrong: electronegativity does change from top to bottom in a group — it decreases

Question 62 Chemistry

Chemistry. What effect would be using powdered Magnesium instead of ribbon have on the rate of reaction between the metal and Hydrochloric Acid?

- A. The rate would decrease
- B. The rate would increase ✓ **Correct answer**
- C. No effect on the rate
- D. The rate can't be determined

A. Wrong: powder has a larger surface area, so the rate would not decrease

B. Correct: powdered magnesium has a much larger surface area than ribbon, so the rate of reaction increases

C. Wrong: surface area does affect the rate

D. Wrong: the effect is determinable: the rate increases

Question 63 Chemistry

Chemistry. A student put 25.0 cm3 of dilute hydrochloric acid into a conical flask. The student added 2.5 g of solid sodium carbonate and measured the change in temperature of the mixture: Which apparatus does the student need to use to obtain the most accurate results?

- A. Balance, Measuring Cylinder, Thermometer
- B. Balance, Pipette, Stopwatch
- C. Balance, Pipette, Thermometer ✓ **Correct answer**

ette, Pipette, Thermometer

A. Wrong: a measuring cylinder is less accurate than a pipette for the acid volume

B. Wrong: a stopwatch is not needed to measure a temperature change

C. Correct: the most accurate set is a balance (for the solid), a pipette (for the acid volume) and a thermometer (for the temperature change)

D. Wrong: a burette is not needed — the acid is measured once, not titrated

Question 64 Chemistry

Chemistry. Which statement about the manufacture of ammonia by the Haber Process is correct?

- A. The reactants and product are elements
- B. The reactants and product are gases ✓ **Correct answer**
- C. The reactants and product are compounds
- D. The reactants are both obtained from the air

A. Wrong: nitrogen is an element but hydrogen is too — yet the product ammonia is a compound, so this is not correct

B. Correct: in the Haber process nitrogen and hydrogen (gases) react to give ammonia (a gas) — reactants and product are gases

C. Wrong: the reactants nitrogen and hydrogen are elements, not compounds

D. Wrong: hydrogen is not obtained from the air

Question 65 Physics

Physics. The dimensions for the physical quantity 'work' are:

- A. MLT
- B. LT2M-1

- 2T-2 ✓ Correct answer
- D. M2L3T

A. Wrong: work has dimensions of energy, not MLT

B. Wrong: LT2M-1 is not the dimension of work

C. Correct: work = force x distance, so its dimensions are ML2T-2

D. Wrong: M2L3T is not the dimension of work

Question 66 Physics

Physics. The refractive index of glass is approximately:

- A. 0.5
- B. 1.0
- C. 1.5 ✓ **Correct answer**
- D. 2.0

A. Wrong: a refractive index below 1 is not possible for glass

B. Wrong: 1.0 is the refractive index of air, not glass

C. Correct: the refractive index of glass is approximately 1.5

D. Wrong: 2.0 is well above the refractive index of ordinary glass

Question 67 Physics

Physics. Which of the following radiations has the greatest penetrating power?

- A. Alpha
- B. Beta
- C. Gamma ✓ **Correct answer**
- D. X-rays

B. Wrong: beta radiation is stopped by a thin sheet of metal

C. Correct: gamma radiation has the greatest penetrating power of the four

D. Wrong: X-rays penetrate well, but less than gamma rays

Question 68 Physics

Physics. If the frequency of a wave is doubled, its wavelength (at constant speed) becomes:

- A. Unchanged
- B. Halved ✓ **Correct answer**
- C. Doubled
- D. Zero

A. Wrong: wavelength = speed / frequency, so doubling the frequency changes the wavelength

B. Correct: at constant speed, doubling the frequency halves the wavelength

C. Wrong: doubling the frequency does not double the wavelength

D. Wrong: the wavelength does not become zero

Question 69 Physics

Physics. The process of splitting a heavy nucleus into smaller nuclei is called:

- A. Fusion
- B. Fission ✓ **Correct answer**
- C. Ionization
- D. Radiation

A. Wrong: fusion is joining light nuclei, not splitting a heavy one

splitting a heavy nucleus into smaller nuclei is fission

C. Wrong: ionization is removing electrons, not splitting a nucleus

D. Wrong: radiation is emitted energy, not the splitting of a nucleus

Question 70 Physics

Physics. For a fixed mass of gas at constant pressure, its volume is directly proportional to its absolute temperature. The statement reflects which of the following laws:

- A. Boyle's law
- B. Charles' law ✓ **Correct answer**
- C. Avogadro's law
- D. Hooke's law

A. Wrong: Boyle's law is about pressure and volume at constant temperature

B. Correct: volume directly proportional to absolute temperature at constant pressure is Charles' law

C. Wrong: Avogadro's law is about volume and amount of gas

D. Wrong: Hooke's law is about springs, not gases

Question 71 Physics

Physics. Ohm's law is expressed as: (Numbered "1." in the scan, the leading 7 being cut off at the page edge; filed as Q71 in sequence.)

- A. V = IR ✓ **Correct answer**
- B. P = VI
- C. Q = It
- D. E = mc2

A. Correct: Ohm's law is V = IR

= VI is the power formula, not Ohm's law

C. Wrong: Q = It is the charge formula, not Ohm's law

D. Wrong: E = mc2 is Einstein's mass-energy relation, not Ohm's law

Question 72 Physics

Physics. The lens used in a simple microscope is: (Numbered "2." in the scan, the leading 7 being cut off; filed as Q72 in sequence.)

- A. Concave
- B. Convex ✓ **Correct answer**
- C. Plano-concave
- D. Cylindrical

A. Wrong: a concave lens diverges light and is not used in a simple microscope

B. Correct: a simple microscope uses a convex lens as its magnifier

C. Wrong: a plano-concave lens diverges light and is not used in a simple microscope

D. Wrong: a cylindrical lens is not used in a simple microscope

Question 73 Physics

Physics. The time required for half of the radioactive nuclei to decay is: (Numbered "3." in the scan, the leading 7 being cut off; filed as Q73 in sequence.)

- A. Mean life
- B. Half-life ✓ **Correct answer**
- C. Decay constant
- D. Lifetime

A. Wrong: mean life is the average lifetime of a nucleus, not the time for half to decay

B. Correct: the time for half of the radioactive nuclei to decay is the half-life

e decay constant is a rate, not a time

D. Wrong: lifetime is not the term for the time for half the nuclei to decay

Question 74 Physics

Physics. The number of protons in the nucleus is called: (Numbered "4." in the scan, the leading 7 being cut off; filed as Q74 in sequence.)

- A. Mass number
- B. Atomic number ✓ **Correct answer**
- C. Isotope number
- D. Neutron number

A. Wrong: the mass number is protons plus neutrons, not protons alone

B. Correct: the number of protons in the nucleus is the atomic number

C. Wrong: "isotope number" is not the standard term

D. Wrong: the neutron number is the number of neutrons, not protons

Question 75 Physics

Physics. The output of an AND gate is HIGH when: (The stem is partly covered by the clipboard clip in the scan; the readable part is "The output of an AND ... HIGH when:".)

- A. Any input is HIGH
- B. All inputs are HIGH ✓ **Correct answer**
- C. all inputs are LOW
- D. Inputs are different

A. Wrong: an AND gate is HIGH only when all inputs are HIGH, not when any one is

B. Correct: an AND gate gives a HIGH output only when all its inputs are HIGH

C. Wrong: an AND gate gives LOW when all inputs are LOW

ifferent inputs give LOW from an AND gate

Question 76 Physics

Physics. Stationary waves are formed due to:

- A. Superposition of two waves moving in the same direction
- B. Reflection of a wave from a rigid boundary ✓ **Correct answer**
- C. Refraction of waves
- D. Diffraction of waves

A. Wrong: two waves moving in the same direction do not form stationary waves

B. Correct: a wave reflected from a rigid boundary superposes with the incident wave to form a stationary wave

C. Wrong: refraction is bending at a boundary, not the formation of stationary waves

D. Wrong: diffraction is spreading around an obstacle, not the formation of stationary waves

Question 77 Mathematics

Mathematics. Junaid and Sarfaraz have singing class every 4th day and 10th day respectively. They were both together today; they will be together again after:

- A. 10 days
- B. 14 days
- C. 20 days ✓ **Correct answer**
- D. 40 days

A. Wrong: 10 days is a multiple of 10 but not of 4

B. Wrong: 14 days is a multiple of neither 4 nor 10

C. Correct: they meet again after the LCM of 4 and 10, which is 20 days

) days is a common multiple but not the first time they meet again

Question 78 Mathematics

Mathematics. The amount of money initially deposited into an account or the amount of money borrowed from a lender is called:

- A. Markup
- B. Interest
- C. Principal ✓ **Correct answer**
- D. Mortgage

A. Wrong: markup is the extra amount charged, not the initial amount

B. Wrong: interest is the charge on the amount, not the amount itself

C. Correct: the amount initially deposited or borrowed is the principal

D. Wrong: a mortgage is a loan secured on property, not the initial amount itself

Question 79 Mathematics

Mathematics. A shopkeeper marks his goods 20% above the cost price and offers 15% discount. His gain profit is:

- A. 0%
- B. 2% ✓ **Correct answer**
- C. 3%
- D. 5%

A. Wrong: taking cost price 100, the marked price is 120 and the selling price is 120 x 0.85 = 102, a gain of 2%, not 0%

B. Correct: cost price 100, marked price 120, selling price 120 x 0.85 = 102 — a gain of 2%

C. Wrong: the gain is 2%, not 3%

e gain is 2%, not 3%

Question 80 Mathematics

Mathematics. The degree of the term 5x2yz is:

- A. 2
- B. 3
- C. 4 ✓ **Correct answer**
- D. Undefined

A. Wrong: the degree is the sum of the exponents: 2 + 1 + 1 = 4, not 2

B. Wrong: the degree is 2 + 1 + 1 = 4, not 3

C. Correct: the degree of 5x2yz is 2 + 1 + 1 = 4

D. Wrong: the degree is defined — it is 4

Question 81 Mathematics

Mathematics. The point of intersection of all three internal bisectors of the angles is called:

- A. Centroid
- B. Circum-center
- C. In-center ✓ **Correct answer**
- D. Ortho-center

A. Wrong: the centroid is the intersection of the medians, not the angle bisectors

B. Wrong: the circum-center is the intersection of the perpendicular bisectors of the sides

C. Correct: the intersection of the internal angle bisectors is the in-center

D. Wrong: the ortho-center is the intersection of the altitudes

Mathematics. There are 60 passengers in the first cabin of the train, 100 in the second and 140 in the third cabin. Number of passengers in the 16th cabin is:

- A. 640
- B. 660 ✓ **Correct answer**
- C. 700
- D. 740

A. Wrong: the sequence increases by 40 each time: 60 + 15 x 40 = 660, not 640

B. Correct: the 16th term is 60 + (16 - 1) x 40 = 660

C. Wrong: 700 would be the 17th cabin

D. Wrong: 740 would be the 18th cabin

Question 83 Mathematics

Mathematics. The surface area of a cube-shaped carton of soaps with a length of an edge of 5 units is:

- A. 25 sq. units
- B. 125 sq. units
- C. 150 sq. units ✓ **Correct answer**
- D. 30 sq. units

A. Wrong: 25 is the area of one face, not the whole surface

B. Wrong: 125 is the volume of the cube, not its surface area

C. Correct: the surface area is 6 x 5 x 5 = 150 sq. units

D. Wrong: 30 is not the surface area of this cube

84 Mathematics

Mathematics. I have to work for 500 minutes a day at my workplace. If I reach at 9:15 am today, then I should leave at:

- A. 5:15 am
- B. 5:35 am
- C. 5:15 pm
- D. 5:35 pm ✓ **Correct answer**

A. Wrong: 500 minutes is 8 hours 20 minutes, so leaving at 5:15 am is impossible

B. Wrong: 5:35 am is before the start of the working day

C. Wrong: 9:15 am plus 8 hours 20 minutes is 5:35 pm, not 5:15 pm

D. Correct: 500 minutes = 8 hours 20 minutes; 9:15 am + 8h 20m = 5:35 pm

Question 85 Mathematics

Mathematics. Prices of Milk and Wheat were in the ratio 3:2. If the price of wheat increases by 50%, then the ratio will be:

- A. 1:1 ✓ **Correct answer**
- B. 3:2
- C. 2:3
- D. 4:9

A. Correct: milk stays 3 and wheat becomes 2 x 1.5 = 3, so the ratio is 3:3 = 1:1

B. Wrong: the ratio changes when the wheat price rises, so it is no longer 3:2

C. Wrong: milk is still 3 and wheat is now 3, not 2

D. Wrong: 4:9 does not follow from a 50% rise in the wheat price

86 Mathematics

Mathematics. When a die is rolled twice, the number of sample points will be:

- A. 6
- B. 12
- C. 36 ✓ **Correct answer**
- D. 72

A. Wrong: 6 is the number of outcomes of a single roll, not two

B. Wrong: 12 is 6 + 6, but the outcomes multiply, not add

C. Correct: two rolls give 6 x 6 = 36 sample points

D. Wrong: 72 is 6 x 12, not the number of sample points

Question 87 Mathematics

Mathematics. If the increase in one quantity causes a decrease in the other quantity, then they are in:

- A. Direct Proportion
- B. Inverse Proportion ✓ **Correct answer**
- C. Compound Proportion
- D. Continued Proportion

A. Wrong: direct proportion is when both increase together

B. Correct: when one quantity increases as the other decreases, they are in inverse proportion

C. Wrong: compound proportion involves more than two quantities

D. Wrong: continued proportion is a chain of equal ratios, not this relation

Mathematics. The roots of the equation [x2 - 8x + 16 = 0] are:

- A. Real & Equal ✓ **Correct answer**
- B. Real & Distinct
- C. Pure Imaginary
- D. Complex Conjugate

A. Correct: x2 - 8x + 16 = (x - 4)2 = 0, so the roots are 4 and 4 — real and equal

B. Wrong: the discriminant is 64 - 64 = 0, so the roots are not distinct

C. Wrong: the roots are 4 and 4, real numbers, not pure imaginary

D. Wrong: the roots are 4 and 4, real numbers, not a complex conjugate pair

Question 89 Computer

Computer. The number system used by digital computers to process quantitative information is _____.

- A. Decimal
- B. Binary ✓ **Correct answer**
- C. Octal
- D. Hexadecimal

A. Wrong: digital computers do not process information in decimal

B. Correct: digital computers process information in binary

C. Wrong: octal is not the number system digital computers use

D. Wrong: hexadecimal is a shorthand for programmers, not the system computers use

90 Computer

Computer. What do we call a computer program that can spread across computers and networks by making copies of itself?

- A. Worm ✓ **Correct answer**
- B. Virus
- C. Adware
- D. Spyware

A. Correct: a worm spreads across computers and networks by making copies of itself

B. Wrong: a virus needs a host file to spread; it does not copy itself across networks on its own

C. Wrong: adware shows advertisements; it does not spread by copying itself

D. Wrong: spyware spies on a user; it does not spread by copying itself

Question 91 Computer

Computer. In a Database table, a single row will be called:

- A. Record ✓ **Correct answer**
- B. Field
- C. Property
- D. Data type

A. Correct: a single row in a database table is a record

B. Wrong: a field is a single column, not a row

C. Wrong: a property is not the name for a row

D. Wrong: a data type is the kind of data a field holds, not a row

92 Computer

Computer. When installing the Windows 10 operating system on a computer, what is the minimum storage space required? (The first words of the stem are cut off at the top of the scan page; the readable part is as given.)

- A. 2 GB
- B. 16 GB ✓ **Correct answer**
- C. 32 GB
- D. 64 GB

A. Wrong: 2 GB is far below the Windows 10 minimum storage

B. Correct: the minimum storage for installing Windows 10 (32-bit) is 16 GB

C. Wrong: 32 GB is the minimum for the 64-bit edition, not the minimum overall

D. Wrong: 64 GB is above the minimum storage required

Question 93 Computer

Computer. A method used by perpetrators to gather personal information using false e-mails and websites is referred to as:

- A. Cyberbullying
- B. Clickjacking
- C. Scam
- D. Phishing ✓ **Correct answer**

A. Wrong: cyberbullying is harassment, not gathering information with false e-mails and websites

B. Wrong: clickjacking tricks a user into clicking something, it is not the false e-mail method

C. Wrong: "scam" is too general — the specific method is phishing

gathering personal information with false e-mails and websites is phishing

Question 94 Computer

Computer. To represent the type of relationship between entities in an ER diagram, which of the following symbols is used:

- A. Diamond ✓ **Correct answer**
- B. Rectangle
- C. Oval
- D. Line

A. Correct: in an ER diagram the relationship between entities is shown by a diamond

B. Wrong: a rectangle represents an entity, not the relationship

C. Wrong: an oval represents an attribute, not the relationship

D. Wrong: a line joins the symbols; it does not represent the relationship type

Question 95 Computer

Computer. Time-sharing operating systems can also be considered as _____.

- A. Real-time
- B. Multitasking ✓ **Correct answer**
- C. Batching processing
- D. Single tasking

A. Wrong: time-sharing is not the same as real-time processing

B. Correct: time-sharing operating systems share the processor among tasks — they are multitasking systems

C. Wrong: time-sharing is not batch processing

D. Wrong: time-sharing is the opposite of single tasking

96 Computer

Computer. Among the following communication mediums, which one requires alignment between sender and receiver for long-range communication:

- A. Fiber optic cable
- B. Microwaves ✓ **Correct answer**
- C. Radio waves
- D. Infrared

A. Wrong: a fiber optic cable is guided by the cable, it needs no alignment

B. Correct: microwave links need the sender and receiver dishes aligned (line of sight) for long-range communication

C. Wrong: radio waves spread out and do not need dish alignment

D. Wrong: infrared is short-range, not long-range

Question 97 Computer

Computer. In MS Word, which of the following options are found in the 'Arrange' group:

- A. Indent left and indent right
- B. Watermark and page color
- C. Size and column
- D. Align and rotate ✓ **Correct answer**

A. Wrong: indent left and right are in the Paragraph group, not the Arrange group

B. Wrong: watermark and page color are on the Design tab, not the Arrange group

C. Wrong: size and column are not in the Arrange group

D. Correct: align and rotate are found in the Arrange group (the scan prints "Align and rotate" under option d)

98 Computer

Computer. When you go to a tyre shop for wheel alignment, what type of computer does the mechanic use:

- A. General-purpose computer
- B. Special-purpose computer ✓ **Correct answer**
- C. Supercomputer
- D. Mainframe computer

A. Wrong: a general-purpose computer does many jobs; the alignment machine is built for one job

B. Correct: a wheel-alignment machine is a special-purpose computer, built for one task

C. Wrong: a supercomputer is not used in a tyre shop

D. Wrong: a mainframe computer is not used in a tyre shop

Question 99 Computer

Computer. Among the following, which one is the purpose of using frames in HTML:

- A. Creates clickable buttons within a web page
- B. Apply styles to different sections of a web page
- C. Divides a web page into sections, each displaying content of different HTML documents ✓ **Correct answer**
- D. To store form data for server-side processing

A. Wrong: frames do not create clickable buttons

B. Wrong: frames do not apply styles — that is the job of CSS

C. Correct: frames divide a web page into sections, each displaying a different HTML document

D. Wrong: frames do not store form data

100 Computer

Computer. Which of the following best defines a hotkey in the context of office automation?

- A. A physical component of the keyboard used for typing text
- B. A software that manages hardware resources in a system
- C. A combination of keys is pressed to perform a specific function quickly ✓ **Correct answer**
- D. A programming language used to create desktop applications

A. Wrong: a hotkey is not a physical keyboard component

B. Wrong: a hotkey is not a software that manages hardware resources

C. Correct: a hotkey is a combination of keys pressed to perform a specific function quickly

D. Wrong: a hotkey is not a programming language

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