Applied Technology Schools

G09 Admission Exam

The test is in three sections:

Section I is for Mathematics and 45 mins duration (Calculators are **NOT** allowed)

Section II is for English Language and 45 minutes duration

Section III is for Arabic and 30 minutes duration

Applied Technology Schools

G09 Sample Admission Exam

Mathematics

Learning Outcomes Required for Admission Exam

Exam Specifications	Number of Questions	18
	Type of Questions	Multiple Choice
	Exam Duration	45 minutes
	Calculators	Not Allowed
	Language	Questions are written both in English and Arabic

Learning Outcomes Tested for Entry to Grade 9: Mathematics

The mathematics part of the admission exam is made up of questions that are derived from the below learning outcomes:

1. Use order of operations to evaluate complex numerical expressions
2. Evaluate numerical expressions involving absolute value
3. Use different properties of equality to solve a linear equation with variable on each side
   - Use the distributive property and combine like terms to solve the resulting equation
   - Conclude that an equation has no solution if it simplifies to an always false statement
   - Conclude that an equation has many solutions if it simplifies to an always true statement
   - Write and solve equations representing a real-life scenario
   - Solve an equation for a specific variable in terms of another
4. Exponents
   - Understand properties of exponents (product of powers, quotient of powers, and power of power) and use them to multiply and divide monomials
   - Understand zero and negative exponents
   - Evaluate algebraic expressions
   - Solve reasoning problems involving exponents
5. Real Numbers
   - Understand square and cube roots
   - Use square roots to solve equations
   - Estimate irrational numbers
6. Linear Relationships and slope
   - Understand rate of change
   - Find slope of a line given the graph or two points
   - Understand direct variation ($y = mx$) and use it to solve real-life problems
7. Find theoretical probabilities of simple events
8. Solve one and Two step inequalities
9. Use vertical, adjacent, complementary and supplementary angles to write and solve equations to find unknown variables and angle measures

All questions in the exam will be translated in Arabic as in Question 1 below.
Q2-Q19 in this sample set are only in English for practice.

1. Simplify the expression below:

بسّط التعبير أدناه:

$$[(-1)^4 \times (3)^2 + (2)^3] - 2^4 \div 4$$

    A. 1

    B. 0.25

✓ C. 13

    D. 14

2. Simplify the expression: $-1 \times [-1 - 20 \div 5] - 2 \times 12 \div 6$

    A. -2

    B. -1

✓ C. 1

    D. 2

3. Which of the following linear equations has no solutions?

    A. $x + 5 = x + 5$

✓ B. $3x - 4 = 3(x - 2)$

    C. $3x - 4 = 2x + 10$

    D. $2(x + 4) = x - 3$

4. Which of the following describes the solutions of the below two equations?

Equation 1: $2x + 1 = 2x$.
Equation 2: $4x - 3 = 4x - 3$.

✔   A.   Equation 1 has no solutions while equation 2 has infinitely many solutions

       B.   Equation 1 has infinitely many solutions while equation 2 has no solutions

       C.   Equation 1 has solution of $x = 0$ while equation 2 has no solutions

       D.   Both equations have no solutions

5. Solve the below equation for x.

$$-3(x - 2) + 2x - 9 = 4x + 7$$

✔   A. -2

    B. -1

    C. 1

    D. 2

6. Solve the below equation for x.

$$3(2x + 3) - 14x = 2(3 - 2x) - 9$$

    A. -4

    B. -3

✓ C. 3

    D. 4

7. What is the value of $|2 - 4| - |-3| + |5|$?

    A. -4

✓ B. 4

    C. 5

    D. 6

8. Solve $2x - 3y = 6$ for $\boldsymbol{y}$.

    A. $y = \dfrac{2x}{3} + 2$

✓ B. $y = \dfrac{2x}{3} - 2$

    C. $y = \dfrac{2x}{2} - 3$

    D. $y = 2x - 6$
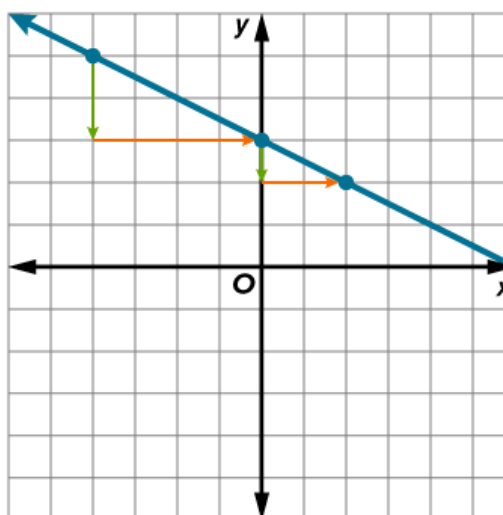
9. What is the solution to the below inequality?

$3y - 17 < 13$

A. $y < -10$

B. $y < 11$

C. $y > 10$

✓   D. $y < 10$

10. What is the slope of the below line?

A. -2

✓   B. $-\dfrac{1}{2}$

C. $\dfrac{1}{2}$

D. 2

11. Mr. Ahmed is drawing a blueprint of a rectangular patio. The width of the patio is 30 feet shorter than twice its length. The perimeter of the patio is 60 feet. If x represents the length and y the width, which of the following equations can be used to find the length of the patio?
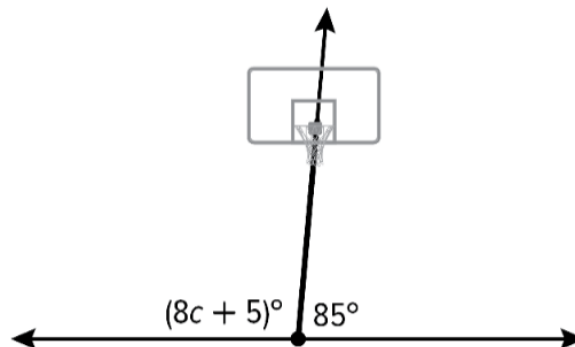
   A. $2x + 2(2x + 30) = 60$

✓ B. $2x + 2(2x - 30) = 60$

   C. $2x + 2(2x - 30) = 30$

   D. $2x + 2(2x + 30) = 30$

12. Which expression shows the simplified form of $\frac{3^8 \cdot 7^4 \cdot 11^6}{3^2 \cdot 7^3 \cdot 11^3}$?

   A. $3^6 \cdot 7^2 \cdot 11^3$

   B. $3^{10} \cdot 7^7 \; 11^9$

✓ C. $3^6 \cdot 7 \cdot 11^3$

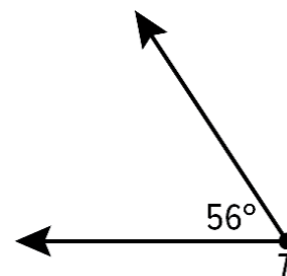   D. $3^5 \cdot 7 \cdot 11^3$

13. After several years of use, a basketball hoop is leaning as shown in the figure. Given the fact that the ground represents a straight line angle, find the value of **c**.

   A. 10

   B. 11

✓ C. 11.25

   D. 12

$(8c + 5)°$ $85°$

14. What is the complement of angle T shown below?

    A. 32°

✓ B. 34°

    C. 44°

    D. 124°

56°
T

15. A contestant on a game show will choose one envelope at random. The table shows the prize distribution of the envelopes. What is the theoretical probability that the contestant will win $100?

    A. $\dfrac{1}{75}$

    B. $\dfrac{74}{75}$

    C. $\dfrac{4}{25}$

✓ D. $\dfrac{2}{25}$

Prize	Number of Envelopes
$0	38
$5	20
$25	10
$100	6
$1,000	1

16. Evaluate the below expression: $(m^3 - 7) - n^2$ if m = 3 and n = −5.

✓ A. −5

    B. −4

    C. −2

    D. 45

17. Which of the below statements is/are true?

    I. $|-11| = 11$.
    II. $\sqrt[3]{-343} = -7$
    III. $|1| - |-1| = 2$.

    A.   I and III Only.

    B.   II and III Only.

✓   C.   I and II Only.

    D.   I, II, and III.

18. The cost of 4 pens is AED 16. The equation $y = kx$ can be used to represent the situation where y is the cost and x is the number of pens. Find the **constant of proportionality** k.

    A.   3

✓   B.   4

    C.   5

    D.   6

19. Find the slope of the line that passes through the points A($-2,4$) and B($4,8$).

    A. $\dfrac{3}{2}$

✓   B. $\dfrac{2}{3}$

    C.   1

    D.   2

Applied Technology Schools

G09 Sample Admission Exam

English

Learning Outcomes Required for Admission Exam

	Two reading passages and 15-20 reading questions. Types of questions include: • Skimming • Scanning • Inferring/deducing meaning from context • Finding supporting details
Exam Specifications	There will be 10-15 language usage/grammar questions. Grammar areas to be assessed may include: • Adjectives – comparative, – use of than and definite article • Adjectives – superlative – use of definite article • Adverbial phrases of time, place and frequency – including word order • Adverbs of frequency • Articles – with countable and uncountable nouns • Countables and Uncountables: much/many • Future Time (will and going to) • Gerunds • Going to Imperatives • Modals – can/could • Modals – have to Modals – should • Past continuous Past simple • Phrasal verbs – common Possessives – use of 's, s' • Prepositional phrases (place, time and movement) • Prepositions of time: on/in/at Present continuous • Present continuous for future Present perfect • Questions • Verb + ing/infinitive: like/ want-would like • Wh-questions in past Zero and 1st conditional
		Exam Duration	45 minutes
	Below are sample questions based on the exam.

Long Distance Learning

A   Australia is famous for its modern cities, such as Sydney and Melbourne. It is true that many people in Australia live in large cities, but many people live in the countryside or in the desert as well. For children who live outside the cities, the nearest school is often 200–300 km away. For some, it can be as far as 800 km away. One solution to this problem is to send children to boarding schools where children live and study for the whole school year at the school. But another solution is to use technology to bring education to the desert.

B   For the last 70 years, Australia has developed the best long-distance education system in the world. In the 1940s, the children who lived in faraway places studied by using a radio. Over the years, Australians developed a system of 'radio schools' which allowed children to listen to lessons at home. The children received their books, homework, and exams by mail. But, sending homework by post used to take a long time. The system of studying by radio and mail was very useful, but it had some disadvantages. For example, students couldn't communicate with each other or talk to the teacher.

C   Now, long-distance learning has changed a lot. Many schools in Australia offer degrees using distance learning. Thanks to modern technology, such as the internet, computers, and smartphones, students can take courses and listen to lessons anywhere in Australia. This has also been helpful for working adults that want to finish their studies at university. Many adults who work full-time can't go to college or university every day. However, they can use distance education to get a degree. The government even provides some money for those who taken on such courses. This way of studying helps many people graduate and get a good job without having to travel to a school.

1.   Australia is well-known for its_____.
   A.   boarding schools
   B.   modern cities
   C.   education
   D.   technology

2. A boarding school is a place where students _____ .
   A. can live and study on campus
   B. study about boards
   C. use the library and hang out with their friends
   D. use the radio to communicate with their teachers

3. Which of the following was necessary for Australian children to learn in the 1940s?
   A. Computer
   B. Mail
   C. Radio
   D. Talking

4. Australian students used to send their _____ by mail.
   A. homework
   B. lectures
   C. radio
   D. textbooks

5. What were the disadvantages to studying by radio and mail?
   A. Parents were not happy having their children at home all day
   B. Students were unable to discuss issues with their teachers
   C. Students were unable to take formal exams
   D. The government did not give degrees for this type of education

6. People such as _____ who work full-time do not have the time to go to college or universities.
   A. teachers
   B. postmen
   C. graduates
   D. adults

7. Long distant education has only been around since the internet started.
   A. True
   B. False
   C. Not given

8.   The Australian government supports people who want to work and study.
   A.   True
   B.   False
   C.   Not Given

Q11-22: Language Usage

11.   The lesson will [… ....] at 1:15pm.
   A.   start
   B.   started
   C.   starting
   D.   starts

12.   Last Monday we [… ....] for the History exam.
   A.   studied
   B.   studies
   C.   study
   D.   studying

13.   Sally [… ....] on her way to class right now.
   A.   is
   B.   was
   C.   am
   D.   are

14.   [… ....] is the nearest mall?
   A.   Who
   B.   What
   C.   Where
   D.   Why

15.   Sally has been off school [… ....] Thursday.
   A.   because
   B.   for
   C.   if
   D.   since

16. If you heat water to 100^0 C, it [..................................].
    A. boil
    B. boils
    C. boiling
    D. boiled

17. I will travel to London tomorrow, and will [... ....] at 7:25 am.
    A. arrive
    B. driving
    C. see
    D. stop

18. Ahmed bought a car yesterday, he [... ....] 87,000 DHS for it.
    A. charged
    B. paid
    C. received
    D. won

19. When I'm sick my mother gives me hot tea to [... ....].
    A. drink
    B. eat
    C. read
    D. use

20. I have started to eat a healthy [... ....] every morning.
    A. breakfast
    B. lunch
    C. dinner
    D. fruit

21. You should take your [...................] today, it might rain.
    A. glasses
    B. gloves
    C. umbrella
    D. wallet

22.   My mother and   I [... ....] shopping for grocery items every week.
A. go
B. goes
C. am going
D. are going

Applied Technology Schools

G09 Sample Admission Exam

Arabic

Learning Outcomes Required for Admission Exam

السُّؤالُ الأَوَّلُ/ القراءة التحليلية: اقْرَأ النَّصَّ التالي بعنوان:(الـمرْجان) قراءةً مُتَمَعِّنَةً، ثُمَّ أَجِبْ عن الأَسْئِلَةِ المُتعلقة به:

1. الـمرْجانُ هو أحدُ أشهرِ الأحجارِ الكريمة، وأَقدَمها في صناعةِ الحليّ رغم أنّه لا يُعَدُّ من الموادّ المعدنيّة. والمرجان لفظٌ عربيٌّ ذُكِر في القرآن الكريم في سورة (الرحمن)، وهو متوسّطٌ بين عالمَيّ النّبات والجماد؛ حيث يُشبِه الجمادَ بتَحجُرِه، ويُشبِه النّبات بكَوْنه أشجارًا نابتة في قَعر البحر، ذات عروق وأغصانٍ خُضْرٍ مُتشعِّبة.

2. يتكوّن الـمرْجان من الحجر الجيريّ الذي ساعدَتْ ملايينُ الحيوانات الدَّقيقة في تَكْوينه، وهذه الحيوانات تَظهَر في المياه بظِلالٍ جميلة سمراء مائلة للصُّفرة، وبرتقالية، وصفراء، وبنفسجية، وخضراء، وحينَما تموت هذه الحيواناتُ الدقيقة تتركُ هَياكلَ من الحَجَر الجيريّ تَكُونُ أساساتٍ لحواجزَ في قاع البحر تُسمَّى (الشِّعاب المرجانيّة).

3. تنتشِرُ أهمُّ المصايدِ العالميّة للمرجان بالقُرب من شواطِئ البحر المتوسّط، وحولَ الجُزُرِ الموجودة فيه، فمصايد المرجان الأحمر تنتشر على شواطئ تونس والجزائر المغرب، والسّاحل الجنوبيّ لفرنسا، وفي قارّة آسيا حول جُزر (ريوكان) في جنوب اليابان، وقد اكتُشِفَ في جنوب (كاليفورنيا) نوعٌ من المرجان بنفسجيّ اللون. أمّا المرجان الأسود، فينمو بنجاح كبير حول (الأرخبيل) الماليزيّ، وشواطئ الجزء الشّماليّ من أستراليا، وفي البحر الأحمر.

4. يحتاج الـمرْجان إلى عناية خاصة لمن أراد أن يَقْتَنيَه أو يتحلّى به ☐ لأنه من الأحجار اللّيّنة؛ حيث يجب حفظه في مكان مُنْفَصل حتى لا يحتَكّ بغيره من الأحجار الكريمة الأخرى الأكثرِ صلابة، أو وضعُه في قماش خاص بالأحجار الكريمة، ويجب كذلك إبعاد الأحماض عنه: الخَلّ، وعصير الليمون، وبعض أنواع الصابون، لأنّها تُتلِفُه مهما كانت مُخَفَّفَة؛ حيث تتفاعل بسهولة مع كربونات الكالسيوم المكوّنة له.

5. وللمرجان فوائدُ عديدة؛ فهو من أثْمن أنواع الأحجار الكريمة الذي يُصنع منه أفخر أنواع المجوهرات **باهظة** الثّمن، وهو يحتوي في **تَركيبته** على عناصر مفيدة للصحّة النفسيّة والجسديّة؛ حيث يُساعد في التخلّص مِن الاكتئاب، كما أنه مفيد لصحّة الجلد ونضارته، لأنّه ينتج تفاعلًا كيميائيًا طبيعيًا داخل الجسم، فيُجَدِّد من حيويّة خلايا البشرة، وتُستَقَى منه مصادر طاقة الجسم، وأحد أفضل العلاجات للتَّخلّص من تأثير سمّ الأفاعي، والتقليل من ضَررها.

6. إنَّ عالَمَ المرجان عالمٌ رائع، يمتدّ ويتّسع، ويُشِعّ بألوان ممتعةٍ للناظرين، ويَفيض جَمالًا، فيُتَمْتِمُ اللِّسانُ: سُبْحانَ مَن خَلَق هذا الجمالَ، وأَوْدَعَه في أعماقِ البحار!

في ضَوْءِ فَهمِكَ للنّصّ، اخْتَرِ الإجابةَ الصَّحيحةَ:

1– يُصنّفُ هذا النّصُّ على أنّه نصّ:			
وظيفيّ	**معلوماتيّ**	قَصَصيّ	أدب الرّحلات
2– بالاستنادِ إلى النّصّ السابق، ينتمي المرجان إلى عالَم:			
بين الجماد والنبات	النبات	الجماد	الحيوان
3– بالاستناد إلى الفقرة الرّابعة، الفكرة الرئيسة تتعلّقُ بـ:			
درجة صلابة المرجان	تأثير القماش على المرجان	**طرائق العناية بالمرجان**	تأثير الأحماض على المرجان
4– بالاستناد إلى النّصّ، الفقرة التي تدلّ على ثقافة الكاتب الدّينيّة:			
الفقرة الخامسة	الفقرة الرابعة	الفقرة الثانية	**الفقرة الأولى**

5– بالاستناد إلى الفقرة الخامسة، يعود ضَمير (الهاء) في كَلمةِ (تَركيبته) في عبارة:"وهو يحتوي في تَركيبته على عناصر مفيدة للصحّة النفسيّة والجسديّة":

المرجان	الأحجار الكريمة	المجوهرات	الفوائد

6– بالاستناد إلى الفقرة الأخيرة، الغَرَض البَلاغيّ الذي تدلّ عليه العبارة: "سبحان مَن خَلَق هذا الجمال":

الدّعاء	التعجّب والإعجاب	التحذير	التمنّي

7– بالاستناد إلى الفقرة الخامسة، مِن مُرادفات كَلمة (باهظة) الواردة في العبارة: " يُصنع منه أفخر أنواع المجوهرات باهظة الثّمن":

رخيصة	غالية	مقبولة	نادرة

8– استخدم الكاتب الفعل المضارع في الفقرة الأخيرة؛ لِيُفيد:

الحديث عن حدث سابق	الاحتمال	الاستمرار	الطّلَب

9– الجملةُ التي وَرَدَ فيها التَّعبير المجازيّ:

المرجان مُفيد لصحّة الجِلْد	عالَم المرجان يأسر الناظرين	يَنْتشر هذا النوعُ في المياه الأكثر برودة	يتغذّى المرجان على الكائنات الدقيقة

10– بالاستناد إلى الفقرة الرّابعة، أنسب علامة ترقيم تَضَعُها في مربّع العبارة: " يحتاج المرجان إلى عناية خاصة لمن أراد أن يَقْتَنيه أو يتحلّى به ☐ "

:	!	—	؛

السُؤالُ الثّاني: التّطبيق اللُّغويّ: املأ الفَراغ بالكَلِمة المُناسبة:

1) إنَّ المرْجان _____ .

رائـعنْ   رائـعًا   **رائـعٌ**   رائـعٍ

2) سُبحانَ الله، ما أَبْدَع خَلْق الله _____ .

(:)   (!)   (؛)   (ـ)

3) كلمة (أَكِفّاء) جمَع، تعني الأشخاص الذين أُصيـبوا بـالعمـى، ومُفرَدُها
_____ .

كفؤ   **كَفيفٌ**   كَفٌّ   كُفْء

4) اقْرئي النّصّ جيّدًا قبل أنْ _____ الأسئلةَ.

تَحلّوا   **تَحلّي**   تَحـلّا   تَحـلَّ

5) نحن _____ في تدمير الشّعاب المرجانية.

أَثَّرنا   أَثَّرَتْ   أَثَّـرْنَ   أَثَّـروا

انْتَهَتِ الأسئلةُ، مَعَ دُعائنا لَكُمْ بالتَّوْفيق والتَّميُّز