REMINDER: The questions in this paper are meant for practice and familiarise students with the format of the ALAM proficiency test. They are NOT the actual test questions.

**Instructions:**

(i) Answer all questions in the answer sheet.

(ii) DO NOT make any mark on the question paper. The Question paper is to be returned to the Invigilator prior to leaving the Examination Room.

(iii) Choose only one answer.

1. Bill Gates __________ one of the wealthiest men in the world.
   A. is
   B. was
   C. will be
   D. has been

2. If I _________ the answer I’d have told you.
   A. knew
   B. should know
   C. would know
   D. had known

3. Adam __________ his plans to go to university in Australia.
   A. remind
   B. advised
   C. cancelled
   D. announcement

4. The kitchen appliance called blenders began _____ in the 1930s.
   A. using
   B. to use
   C. to be used
   D. which used

5. A partnership is an association of two or more individuals who _______ together to develop a business.
   A. they work
   B. working
   C. worked
   D. work
6. The judge gave him a 10 year prison __________ for his crime.
   A. sentence
   B. period
   C. punishment
   D. time

7. It __________ him being a seafarer; I can’t imagine him doing anything else.
   A. fits
   B. matches
   C. agrees
   D. suits

8. He is making a _________ mistake.
   A. big
   B. tall
   C. high
   D. large

9. Eileen, who graduates today, never felt so _________ in her life before.
   A. lucky
   B. happy
   C. cheery
   D. spirited

10. He looked forward every year to April because he always made a long bike trip as soon as school was _________.
    A. absent
    B. exposed
    C. out
    D. gone

   In the story of eggs we cannot omit one other very popular type of egg – fish roe, more notably caviar. There is much __________ on this expensive ‘fruit of the fish’ _______ to which is the best and most ______ variety. The proper way to eat this __________ is simply on its own with a ______ squeeze of lemon juice. But it is ______ served with toast and butter. Caviar is ______ with many egg dishes and is frequently _______ as garnish for other dishes. Caviar ______ the roe from the Acipenserides fish family which includes Beluga, Sturgeon and others. The fish ______ caught in estuaries of rivers.
The study of history provides many benefits. First, we learn from the past. We may repeat mistakes, but, at least, we have the opportunity to avoid them. Second, history teaches us what questions to ask about the present. Contrary to some people’s view, the study of history is not the memorization of names, dates, and places. It is the thoughtful examination of the forces that have shaped the courses of human life. We can examine events from the past and then draw inferences about current events. History teaches us about likely outcomes.

Another benefit of the study of history is the broad range of human experience which is covered. War and peace are certainly covered as are national and international affairs. However, matters of culture (art, literature, and music) are also included in historical study. Human nature is an important part of history: emotions like passion, greed, and insecurity have influenced the shaping of world affairs. Anyone who thinks that the study of history is boring has not really studied history.

21. What is the main idea of this passage?
A. Studying history helps us to live in today’s world.
B. Studying history is not just memorization.
C. The role of education is to help students deal with real life.
D. Students should study both national and international history.

22. In the first paragraph, inferences means __________.
A. graphs
B. articles
C. conclusions
D. circumferences

23. Which method of teaching history would the author of this passage support?
A. Applying historical events to modern society.
B. Using flash cards to remember specific facts.
C. Weekly quizzes on dates and events.
D. Student competitions for most books memorized.
24. The benefits of studying history do not include __________.
   A. having the opportunity to avoid repeating mistakes made in the past
   B. having the ability to predict outcomes based on inferences about past events
   C. remembering names, dates and places
   D. understanding culture as related to society

25. According to the passage, why might some people find the study of History boring?
   A. They don’t like to study about dead people.
   B. They could not relate past events to the occurrence of current events.
   C. They feel that the teachers teaching History are as ancient as the subject.
   D. There is a general perception that when you learn History, you are a boring person.

26. You can only have your money back if you produce a __________.
   A. bill
   B. receipt
   C. ticket
   D. invoice

27. My doctor says I should __________ my daily sugar intake.
   A. reduce
   B. lower
   C. cut
   D. drop

28. In Lahad Datu, the plantation sometimes __________ fire.
   A. seizes
   B. grasps
   C. catches
   D. traps

29. The apartment she __________ in Melbourne was not far from the railroad museum.
   A. borrowed
   B. loaned
   C. had accessed
   D. rented

30. “The __________ movie I’ve ever seen is Cannibal,” he said.
   A. nastiest
   B. most evil
   C. terrible
   D. worst
Doctors who operate on conjoined twins are often faced with making equally tough decisions. This is because there are 31 questions involved: on how to divide the 32 shared parts or having to ‘sacrifice’ the 33 of one twin in order to save 34 other. Most doctors do not like to 35 such decisions and they will endeavour to 36 both lives as best as possible. When 37 are certain that only one could be 38, they would choose the one less deformed, 39 and most likely to survive and lead 40 normal life.

31. A. ethics  B. ethical  C. ethic  D. ethically
32. A. twin’s  B. twins  C. twins’  D. twin
33. A. life  B. living  C. body  D. limbs
34. A. its  B. each  C. one  D. the
35. A. discover  B. make  C. draw  D. conclude
36. A. save  B. rescue  C. revive  D. strengthen
37. A. those  B. who  C. they  D. each
38. A. survived  B. operated  C. checked  D. saved
39. A. stronger  B. weaker  C. clever  D. kinder
40. A. the  B. some  C. a  D. any
Directions: For this section, solve each problem and decide which is the best from the choices given.

Notes

1. The use of a calculator is permitted.
2. All numbers used are real numbers.
3. Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
4. Unless otherwise specified, the domain of any function \( f \) is assumed to be the set of all real numbers \( x \) for which \( f(x) \) is a real number.

Reference Information

The number of degrees of arc in a circle is 360.

The sum of the measurements in degrees of the angles of a triangle is 180.

1. What simple interest rate will Sally need to secure to make $5,000 in interest on a $20,000 principal over 5 years?
   A. 4%
   B. 8%
   C. 5%
   D. 7%

2. Jim is reviewing his algebra quiz. He is very sure that one of his solutions is incorrect. Which one?
   A. \( t - 2t - 3t = 32 \) \( t = 8 \)
   B. \( p - 3(p-5) = 10 \) \( p = 2.5 \)
   C. \( 4y + 3y = 28 \) \( y = 4 \)
   D. \( 2x + 5(x - 1) = 9 \) \( x = 2 \)
3. If two planes leave the same airport at 3:00 PM, how many miles apart will they be at 5:00 PM if one travels directly east at 150 mph and the other travels directly south at 200 mph?
   A. 50 miles  
   B. 500 miles  
   C. 700 miles  
   D. 100 miles

4. A bakery uses a special flour mixture that contains corn, wheat, and rye in the ratio of 3:5:2. If a bag of the mixture contains 5 pounds of rye, how many pounds of wheat does it contain?
   A. 2  
   B. 5  
   C. 7.5  
   D. 12.5

5. In the figure below, the square has two sides which are tangent to the circle. If the area of the circle is $4a^2\pi$, what is the area of the square?

   ![Diagram of circle and square]

   A. $2a^2$  
   B. $4a$  
   C. $4a^2$  
   D. $16a^2$

6. $10^3$ is not equal to which of the following?
   A. 10,000  
   B. $1.0 \times 10^3$  
   C. $10 \times 10 \times 10$  
   D. $10 \times 10^2$

7. Solve: $0.25 + 0.65$
   A. $\frac{1}{2}$  
   B. $\frac{9}{10}$  
   C. $\frac{4}{7}$  
   D. $\frac{2}{9}$

8. There are 8 ounces in a $\frac{1}{2}$ pound. How many ounces are there in $7\frac{3}{4}$ lbs?
   A. 12 ounces  
   B. 86 ounces  
   C. 138 ounces  
   D. 124 ounces
9. If \(9b = 81\), then \(\sqrt[3]{b} \cdot 3\sqrt[3]{b} = \)
   A. 27
   B. 81
   C. 9
   D. 729

10. If the \textit{product} of \((1 + 2)\), \((2 + 3)\), and \((3 + 4)\) is equal to one-half the sum of 20 and \(x\), what is the value of \(x\)?
   A. 10
   B. 85
   C. 105
   D. 190

11. If the perimeter of a rectangle \(ABCD\) is equal to \(p\), and \(x = \frac{2}{3}y\), what is the value of \(y\) in terms of \(p\)?
   A. \(\frac{p}{10}\)
   B. \(\frac{3p}{10}\)
   C. \(\frac{p}{3}\)
   D. \(\frac{2p}{5}\)

12. How many numbers from 1 to 200 and inclusive of 200 are equal to the cube of an integer?
   A. One
   B. Two
   C. Three
   D. Five

13. \(-32 + 7\) equals
   A. \(-25\)
   B. 25
   C. \(-26\)
   D. 26
14. In rectangle $PQRS$ above, what is $a + b$ in terms of $x$?
A. $90 + x$
B. $90 - x$
C. $180 + x$
D. $270 - x$

15. The average of three numbers is $V$. If one of the numbers is $Z$ and the other is $Y$, what is the remaining number?
A. $ZY - V$
B. $Z - 3 - Y$
C. $Z - V - Y$
D. $3V - Z - Y$

16. Ahmad is driving to a meeting that is 28 miles away. He needs to be there in 30 minutes. How fast does he need to go to make it to the meeting on time?
A. 25 mph
B. 37 mph
C. 41 mph
D. 56 mph

17. If a circle has a diameter of 8, what is the circumference?
A. 6.28
B. 12.56
C. 25.13
D. 50.24
18. \[ABCD\] is a parallelogram. \(BD = 2\). The angles of triangle \(BCD\) are all equal. What is the perimeter of the parallelogram?
A. 12
B. \(9\sqrt{3}\)
C. 8
D. \(3\sqrt{3}\)

19. A triangle has a perimeter of 13. The two shorter sides have integer lengths equal to \(x\) and \(x + 1\). What is the length of the other side of the triangle?
A. \(2 - 6x\)
B. \(4 - x\)
C. \(2(6 - x)\)
D. \(13 - 2x\)

20. \((9 ÷ 3) X (8 ÷ 4) = \)
A. 1
B. 6
C. 72
D. 576
SECTION 3
20 Questions

1. Which unit is S.I. base unit?
   A. Kelvin   B. Joule   C. Hertz   D. Gram

2. There is a graph with variable y at vertical axis and variable x at the horizontal axis. The two variables are related by the equation $y = mx + c$, where $m$ and $c$ are the constants. What is the slope of the graph?
   A. $c$  B. $m$  C. $m/x$  D. $c/m$

3. Which one is in ascending order?
   A. $1 \times 10^{-4}$ km, $1 \times 10^{-2}$ m, $1 \times 10^4$ mm
   B. $1 \times 10^{-4}$ km, $1 \times 10^4$ mm, $1 \times 10^{-2}$ m
   C. $1 \times 10^{-2}$ m, $1 \times 10^{-4}$ km, $1 \times 10^4$ mm
   D. $1 \times 10^{-2}$ m, $1 \times 10^4$ mm, $1 \times 10^{-4}$ km

4. When measuring a length with a ruler, the eye must always be placed vertically above the mark being read. This is to avoid
   A. Parallax Error  B. Zero Error  C. End Error  D. Random Error

5. Which of the following optical instruments do not use converging lenses?
   A. Periscope   B. Microscope   C. Projector   D. Camera

6. The refractive index for glass is 1.7. What is the critical angle for the glass?
   A. $36^\circ$  B. $39^\circ$  C. $42^\circ$  D. $43^\circ$

7. A ray is passing from air to water and it is refracted. The refractive index for the water is 4/3. Which of the following equations is true? Given: $x$: incident angle, $y$: refracted angle
   A. $y = \frac{(4x)}{3}$  B. $\sin x / \sin y = \frac{3}{4}$  C. $\sin x / \sin y = 4/3$
   D. $\sin x / (\sin (90^\circ - y)) = 4/3$

8. An object is located at the principle focus of a converging lens. The lens has a focus length of $f$. What is the distance of the image formed?
   A. $f$  B. $2f$  C. $1/f$  D. infinity

9. In p type semiconductor,
   A. the number of holes and the atoms of impurity is the same
   B. the number of holes is greater than the number of electrons
   C. the number of electrons is greater than the number of holes
   D. the number of holes is the same as the number of electrons

10. One vibration source has a frequency of $f$. The waveform generated by the vibrator has a wavelength of $\lambda$. What is the speed of the waveform?
    A. $2 \lambda f$  B. $\lambda f$  C. $\lambda f/2$  D. $\lambda f^2/2$
11. A house has 240V supply. A given circuit has six lamps, all in parallel connection. Each lamp is rated 60W, 240V. What is the total current passing through the whole circuit?
   A. 0.015 A    B. 0.025 A    C. 0.15 A    D. 1.5 A

12. The primary and the secondary coils of a transformer have 2000 and 500 turns respectively. If the primary is connected to a 120 V a.c. supply, what will be the secondary current if there is a 20 Ω resistor connected to the secondary coils?
   A. 1.5 A    B. 4.0 A    C. 6.0 A    D. 15.0 A

13. A metal block has a mass of 2 kg. A total of 8400 J of heat energy is supplied to the metal. The temperature of the metal has increased by θ °C. Given that the specific heat capacity of the metal is 420 J/kg°C and when there is no heat loss to surrounding, find θ.
   A. 10 °C    B. 16 °C    C. 20 °C    D. 42 °C

14. When some impurities are added to liquid, the boiling point will
   A. become zero    B. increase    C. decrease    D. same

15. X-ray has a wavelength of 2 x 10^{-11} m. Wavelength can be expressed as:
   A. 0.2 pm    B. 20 pm    C. 20 nm    D. 200 nm

16. A car with a mass of 1000 kg and is traveling with the constant speed of 10 ms^{-1}. Once the brake is pushed consistently, the car stops at 25 m. What is the total force required to stop the car?
   A. 200 N    B. 250 N    C. 320 N    D. 2000 N

17. An electric motor is supplied with 12 V and the current flowing is 5A. The motor is used to lift an object with a mass of 6 kg through 3 m in height, in 4 s. What is the efficiency of the motor?
   A. 20%    B. 40%    C. 50%    D. 75%

18. Tiger Woods drives a golf ball of a mass 0.045 kg which attains velocity of 30 m/s. If the time of impact is 0.005 s, what is the average impulsive force acting on the ball?
   A. 300 N    B. 250 N    C. 270 N    D. 310 N

19. The density of an object is 1.36 x 10^4 kgm^{-3}. What will be its mass if the volume is 4 x 10^{-4} m^3?
   A. 0.00294 kg    B. 0.0343 kg    C. 3.43 kg    D. 5.44 kg

20. Three resistors of 4 Ω, 4 Ω and 4 Ω are connected in parallel and this arrangement is then connected in series with a 3 Ω resistor. The resulting network is connected to a battery of 12 V. What is the current supplied by the battery?
   A. 0.86 A    B. 2.0 A    C. 3.6 A    D. 8.0 A