ASIAN UNIVERSITY FOR WOMEN

ADMISSION TEST 2019-20

APPLICANT ID: _____

PLEASE FILL UP THE BOX BEFORE STARTING THE EXAM AND MENTION YOUR APPLICANT ID ON ALL THE PAGES

APPLICANT NAME: _____

APPLICANT COUNTRY: _____

DATE: _____

Quantitative Analysis - Set-A

{50 MINUTES}

INSTRUCTIONS TO CANDIDATES

- **Answer all the questions.**
- **Write your answers on the Bubble sheet.**
- **You must complete the answer sheet within the time limit.**

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Section A: Each question carries 1.5 marks, 20 x 1.5 = 30 marks.

1. The following table shows 9th Grade Students at South Asian High School:

	Boys	Girls
Enrolled in Spanish	12	13
Not Enrolled in Spanish	19	16

Approximately what percent of the 9th Grade girls at South Asian High School are enrolled in Spanish?

(A) 21% (B) 37% (C) 45% (D) 50% (E) 57%

2. Bank X pays a simple interest of $80 on a principal of $1000 annually. Bank Y pays a simple interest of $140 on a principal of $1000 annually. What is the ratio of the interest rates of Bank X to Bank Y?

(A) 5:8 (B) 8:5 (C) 4:7 (D) 7:4 (E) None of these.

3. List L consists of the numbers 1, $\sqrt{2}$, x, x^2, where x > 1; The range (highest - lowest) of the number in the list L is 4. What is the value of x?

(A) 3 (B) $\sqrt{2}$ (C) $\sqrt{5}$ (D) 4 (E) 9

4. Length of the sides of a triangle is given, which of them represents a right triangle?

(A) 1, 2, 3 (B) 2, 3, 4 (C) 3, 4, 5 (D) 4, 5, 6 (E) $\sqrt{3}$, $\sqrt{4}$, $\sqrt{5}$

5. 60% of employees in a factory are workers. All the remaining employees are executives. The annual income of each worker is $ 350. The annual income of each executive is $ 400. What is the average annual income of all the employees in the factory together?

(A) $350 (B) $360 (C) $370 (D) $400 (E) $375

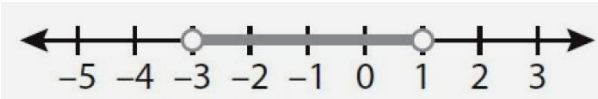
6. Of 30 theater tickets sold, 20 tickets were sold at prices between \$10 and \$30 each and 10 tickets were sold at prices between \$40 and \$60 each. Which of the following is TRUE?

(A) The average (arithmetic mean) of the prices of the 30 tickets is greater than \$50
(B) The average (arithmetic mean) of the prices of the 30 tickets is less than \$50
(C) The average (arithmetic mean) of the prices of the 30 tickets is equal to \$50
(D) The relation cannot be determined from the information given

7. Which one of the following could be an integer?

(A) The average of 5 and 6.
(B) The average of two consecutive integers.
(C) The average of three consecutive integers.
(D) The average of four consecutive integers.

8. The number line shown below represents which of the following inequalities?



(A) $x < -3$
(B) $-6 < 2x < 2$
(C) $-3 < 3x < 1$
(D) $1 < 2x < 3$
(E) $x > -1$

9. For the circle $(x-1)^2 + (y+1)^2 = 5$ on xy-plane, find the circumference of the circle.

(A) 10π (B) $2\sqrt{5}\pi$ (C) $5\sqrt{2}\pi$ (D) 16π (E) 12π

10. If $f(x) = x^2 - 1$, what is the value of $f(-1) + f(-y) = ?$

(A) $y^2 - 1$ (B) $-y^2 + 1$ (C) $y^2 + 1$ (D) $y^2 - 2y$ (E) $y^2 - 2y - 1$

11. Which of the following numbers can be removed from the set S = {0, 2, 4, 5, 9} without changing the average of the set S?

(A) 0 (B) 2 (C) 4 (D) 5 (E) 9

12. If $\frac{1}{x}+\frac{1}{y}=\frac{1}{3}$ then $\frac{xy}{x+y}=?$

(A) 1/5 (B) 1/3 (C) 1 (D) 3 (E) 5

13. What will be the possible solution of $\left|\left|x-2\right|-2\right|=5$?

(A) 5 (B) -3 (C) -1 (D) 7 (E) 9

14. For each integer m > 1, let X(m) denote the sum of the integers from 1 to m. For example, X (100) = 1 + 2 + 3 + ... + 100 = 5,050. What is the value of X(200)?

(A) 30,100 (B) 30,050 (C) 20,100 (D) 45,150 (E) 21,500

15. If an amount P is to be invested at an annual interest rate of 3.5 percent, compounded annually, what should be the value of P so that the total amount is $1,000 at the end of 3 years?

(A) $904.90 (B) $903.50 (C) $902.00 (D) $850.50 (E) $901.94

16. In how many different ways can the letters in the word STUDY be ordered?

(A) 4! (B) 5! (C) 3! (D) 8! (E) 2!

17. Which of the following integers cannot be expressed as the sum of two prime numbers?

(A) 7 (B) 9 (C) 11 (D) 12 (E) 10

18. In the *xy*-plane, a quadrilateral has vertices at (–1, 4), (7, 4), (7, –5), and (–1, –5). What is the perimeter of the quadrilateral?

(A) 18 (B) 34 (C) 32 (D) 19 (E) 17

19. Marie has twice as many brothers as sister. Her brother Max has the same number of brothers as sisters. How many brothers and sisters are there?

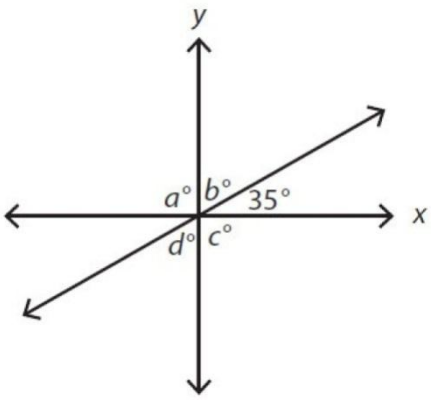
(A) 3 (B) 5 (C) 6 (D) 7 (E) 9

20. A certain store reduces the original price of particular item by 15%. It then reduces this new price by 10% to get the current price. What is the percent decrease from the original price to the current price?

(A) 5%
(B) 10%
(C) 15%
(D) 23.5%
(E) 25%

Section B: *Each question carries 2 marks, 2 x 10 =20 marks.*

21. Consider the following graph and find what will be the value of $a+b-c+d$?



(A) 200^0 (B) 275^0 (C) 325^0 (D) 335^0 (E) 110^0

Consider the following chart, and answer the questions (22-25):

Population and GDP for 50 African Countries

Gross Domestic Product	Population: More Than 50 Million	20–50 Million	10–20 Million	2–10 Million	Less Than 2 Million	Total
More Than $100 Billion	3	2	0	0	0	5
$20–100 Billion	1	7	1	1	0	10
$10–20 Billion	1	3	3	3	3	13
Less Than $10 Billion	0	0	7	8	7	22
Total	5	12	11	12	10	50

22. Among the 50 African countries represented in the chart above, how many countries have a population between 10 million and 50 million and a GDP between $10 billion and $20 billion?

(A) 6
(B) 7
(C) 13
(D) 16
(E) 23

23. Among the 50 African countries represented in the chart above, what percent of the countries have population of less than 20 million people and a GDP of less than $20 billion?

(A) 38%
(B) 44%
(C) 62%
(D) 68%
(E) 90%

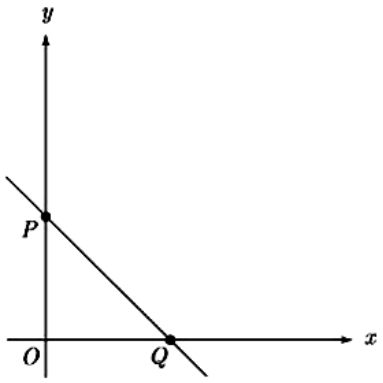
24. Approximately what percent of the African countries in the chart above that have a GDP between $10 billion and $20 billion also have a population between 10 million and 20 million?

(A) 6%
(B) 23%
(C) 26%
(D) 30%
(E) 51%

25. According to the chart above, which one of the following is greatest?

(A) The number of countries with more than $10 billion of GDP and a population of less than 20 million
(B) The number of countries with less than $20 billion of GDP and a population of more than 10 million
(C) The number of countries with more than $20 billion of GDP
(D) The number of countries with less than $100 billion of GDP and population of less than 10 million
(E) The number of countries with less than $100 billion of GDP and a population between 10 million and 50 million

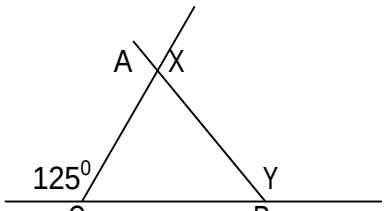
26. The line $y = -\frac{5}{6}x + b$ graphed on the rectangular coordinate axis.



Which of the following statements is true?

(A) OQ is greater than OP
(B) OQ is less than OP
(C) OQ is equal to OP
(D) PQ is less than OQ
(E) The relationship cannot be determined from the information given

27.



AB = BC

In the figure above, what is the value of the angle, Y?

(A) 55^0
(B) 70^0
(C) 75^0
(D) 110^0
(E) 125^0

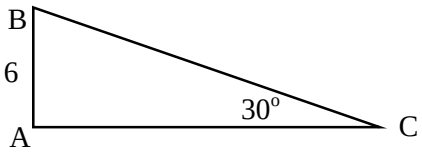
28. From the 5 points A, B, C, D, and E on the number line as below, 3 different points are to be randomly selected. What is the probability that the selected 3 points will all be positive?

(A) 3/10
(B) 2/5
(C) 3/5
(D) 4/5
(E) 1/10

29. The relationship between temperature C, in degrees Celsius, and temperature F, in degrees Fahrenheit, is given by the formula F= (9/5) C + 32. If a recipe calls for an oven temperature of 210 degrees Celsius, what is the oven temperature in degrees Fahrenheit?

(A) 420 (B) 410 (C) 340 (D) 510 (E) 230

30. What is the area of the following triangle ABC?



(A) 20 (B) 18 $\sqrt{3}$ (C) 18 (D) 23 (E) 15 $\sqrt{2}$