Kuwait University

Office of the Vice President for Academic Affairs
Measurement and Teaching Development Center

Academic Aptitude Tests

Student Name	Version A

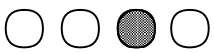
Civil ID No.

Instructions:

1. The aptitude tests consist of three tests.

Test	Number of Questions	Time
English	85	1 Hour
Mathematics	20 (No Calculator)	1 Hour
Chemistry	25	1 Hour

2. Mark all your answers on the **Answer Sheet** and in the proper section**.** On your answer sheet as shown below, using a pencil, darkenthe proper circle.



3. Verify all personal and test data on answer sheet and don't make any changes unless approved by the proctor.
4. Write down your name and Civil ID# on the test booklet.
5. Copy the test's version on your answer sheet.
6. Follow the proctor's instruction during the test.
7. During testing, be quite and avoid any cheating situation.
8. Observe the allocated and the announced time for each test.

Maths

1. The solution set of $2x^2 + x - 28 = 0$ is:

(a) $\left\{\frac{7}{2}, -4\right\}$ (c) $\{4, 7\}$

(b) $\left\{4, -\frac{7}{2}\right\}$ (d) $\{-4, 7\}$

2. The solution set of $|7x + 5| + 2 = 0$ is:

(a) $\{-1\}$ (c) $\left\{-1, -\frac{3}{4}\right\}$

(b) $\left\{-\frac{3}{7}\right\}$ (d) None of the previous

3. The solution set of $x^2 + 9 \leq 6x$ is:

(a) ϕ (c) $[-3, 3]$

(b) $\Re$ (d) None of the previous

4. Let x, y be two real numbers such that $x < y$. Then $[(x + y) + |x - y|] =$

(a) $2x$ (c) $2y$

(b) $x - y$ (d) $2(x + y)$

5. $x^3 + y^3 =$

(a) $(x + y)(x^2 + xy + y^2)$ (c) $(x + y)(x^2 + 2xy + y^2)$

(b) $(x + y)(x^2 - xy + y^2)$ (d) $(x + y)(x^2 - 2xy + y^2)$

6. $\frac{1}{x^2 + x} - \frac{1}{x} =$

(a) $\frac{-1}{x+1}$ (c) $\frac{2-x}{x^2+x}$

(b) $\frac{x}{x+1}$ (d) $\frac{2-x}{x(x^2+x)}$

7. If you simplify $\frac{(x+1)^3-1}{x}$ and then put $x = 0$, you obtain:

(a) ∞ (c) 0
(b) 3 (d) 1

8. The road between two cities A and B is 300 km long. A car leaves city A towards B at a constant speed of 80 km/hour. At the same time another car leaves B towards A at a constant speed of 70 km/hour. After how many minutes do the two cars meet?

(a) 150 min. (c) 120 min.
(b) 300 min. (d) 180 min.

9. In January, prices went up by 20%, then went up again by 10% in February. If the price of an item was 100 KD on the first of January, what is the price of this item on the first of March?

(a) 130 KD (c) 128 KD
(b) 132 KD (d) 136 KD

10. A shopkeeper bought 20 kg of apples for 200 fils per kilo. He found that 4 kg of the apples are rotten and cannot be sold. Find the selling price of each kilogram of the rest if he wants 100% profit.

(a) 500 fils/kg (c) 300 fils/kg
(b) 400 fils/kg (d) 600 fils/kg

11. The working day in a factory is 8 hours long. To cut the workforce by x% without affecting the daily production output, the management had to raise the working hours to 10hours per day. Find x.

(a) 25 (c) 10
(b) 8 (d) 20

12. Let x, y be two positive real numbers whose product is 100. What is the maximum value that x can take?

(a) 100 (c) 10
(b) 200 (d) None of the previous

13. The domain of $f(x) = \frac{\sqrt{1-x^2}}{\sqrt{1-x}}$ is :

(a) $[-1, 1)$ (c) $[-1, \infty)$
(b) $\Re \setminus \{1\}$ (d) $(-1, 1)$

14. Let $f(x) = 2x+1$, $g(x) = x^2 - 3$. Then $g \circ f(x) =$

(a) $4x^2 + 2x - 3$ (c) $4x^2 + 4x - 2$
(b) $4x^2 + 4x - 3$ (d) $4x^2 + x - 2$

15. The solution set of $\frac{1}{x} < x$ is:

(a) $(1, \infty)$
(b) $(-1, 0) \cup (1, \infty)$
(c) $(-\infty, -1)$
(d) $(-1, 1)$

16. The solution set of $\frac{1}{2}x^{\frac{-1}{2}} + \frac{1}{3}x^{\frac{1}{2}} = 0$ is:

(a) $\{6\}$
(b) $\{3, 2\}$
(c) $\left\{-3, 2\right\}$
(d) ϕ

17. The volume of a right circular cylinder is 36π cubic feet. If the height of the cylinder is 4 ft, then find the radius of the base.

(a) 2 ft
(b) 3 ft
(c) 4 ft
(d) 5 ft

18. A rectangular box, open at the top, has a square base, and its height is 2 cm. Find the length of the side of the base knowing that the total surface area of the box is 9 cm^2.

(a) 2 cm
(b) 1 cm
(c) 9 cm
(d) –9 cm

19. In the imperial measures of weight, pounds and stones are used. We know that one stone is equal to 14 pounds, and each pound is approximately 450 grams. If a man weighs 10 stones and 10 pounds, then what is his weight in kilograms?

(a) 67.5 kg
(b) 77.5 kg
(c) 87.5 kg
(d) 57.5 kg

20. In a certain store, the revenue in November is $\frac{2}{5}$ the revenue in December. The revenue in January is $\frac{1}{4}$ the revenue in November. If the total revenue of the three months is 3000 KD, then what is the revenue in November?

(a) 700 KD
(b) 900 KD
(c) 800 KD
(d) 200 KD