AUS | الجامعة الأميركية في الشارقة
American University of Sharjah

THIS PLACEMENT TEST IS ONLY FOR:

- ✓ Business majors
- ✓ Design Management major

INSTRUCTIONS:

- ✓ The test consists of 30 multiple choice questions.
- ✓ All types of calculators are NOT allowed.
- ✓ Duration of the exam is 90 minutes (around three minutes per question).

1. $(5x-3)(x^3-5x-2) =$

   (a) $5x^4-3x^3-25x^2+25x-6$
   (b) $5x^4-3x^3+25x^2-5x-6$
   (c) $5x^3-3x^3-25x^2+5x+6$
   (d) $5x^3-28x^2+25x-6$
   (e) None of the above

2. $\sqrt[4]{\dfrac{x^8y^2x^{-3}}{xy^2}} =$

   (a) x^3y
   (b) xy
   (c) x
   (d) x^4y
   (e) None of the above

3. If $\sqrt{\dfrac{x}{x^{-7}}} = x^n$, then the value of n is

   (a) -4
   (b) 2
   (c) 4
   (d) 8
   (e) None of the above

4. If $x < 3$, then $|x-3| =$

   (a) $x-3$
   (b) $x+3$
   (c) $3-x$
   (d) 2
   (e) None of the above

5. The domain of the function $f(x) = \dfrac{16-x^2}{\sqrt{x+2}}$ is

   (a) All real numbers except -2
   (b) All real numbers except 2
   (c) All real numbers
   (d) All real numbers larger than -2
   (e) None of the above

6. $2x^3-4x^2 =$

(a) $2x^2(x-2)$

(b) $2x^2(x+2)$

(c) $2x^2(x-4)$

(d) $2x^2(x+4)$

(e) None of the above

7. The domain of $\ln(3+x)$ is

(a) all real numbers

(b) $x > 0$

(c) $(-3, \infty)$

(d) $(3, \infty)$

(e) None of the above

8. If $\dfrac{x-4}{x+2} = 0$, then $x =$

(a) 2

(b) -2

(c) 4

(d) -4

(e) None of the above

9. If $N = 2R$, then $2N + R - 2 =$

(a) $5R$

(b) $5R + 2$

(c) $5R - 2$

(d) $5R + 5$

(e) None of the above

10. If $4x - 6 = -2x - 4 - x - 9$, then $x =$

    (a) 1
    (b) -1
    (c) -2
    (d) 0
    (e) None of the above

11. If $h(x) = 2x^2 + 6x - 9$ and $k(x) = 3x^2 - 8x + 8$, then $h(2) - 2k(1) =$

    (a) 5
    (b) -6
    (c) -5
    (d) 6
    (e) None of the above

12. The $x-$intercepts of the parabola $y = x^2 + 3x + 6$ are

    (a) 6
    (b) -6
    (c) 2 and 3
    (d) -2 and -3
    (e) None of the above

13. If $x = 1/2$, then $\dfrac{3}{x+1} =$

    (a) 2.5
    (b) 5
    (c) 3
    (d) 2
    (e) None of the above

14. If $a + b = 9$, then $3b =$

    (a) $9 - 3a$
    (b) $27 - 3a$
    (c) $27 + 3a$
    (d) $27 + a$
    (e) None of the above

15. If the price of a phone is \$200 after 20% discount. The original price of the phone is

(a) \$240
(b) \$260
(c) \$250
(d) \$270
(e) None of the above

16. If $y = 4$, then $\dfrac{-2}{y^{-2}} =$

(a) 16
(b) -16
(c) 32
(d) -32
(e) None of the above

17. $\dfrac{\dfrac{2}{x} - \dfrac{3}{x}}{2x} =$

(a) $\dfrac{-1}{2x}$
(b) $\dfrac{-1}{2x^2}$
(c) $\dfrac{1}{2x^2}$
(d) $\dfrac{2}{x}$
(e) None of the above

18. $\dfrac{3x}{x-1} \div \dfrac{x}{x-1} =$

(a) $\dfrac{3}{x+1}$
(b) 3
(c) $\dfrac{3}{x^2+1}$
(d) $3x$
(e) None of the above

19. The solution for $x(x+1)=2$ is $x=$

    (a) $2, 1$
    (b) $2, -1$
    (c) $-2, -1$
    (d) 5
    (e) None of the above

20. The domain for $f(x)=2e^{-x}$ is

    (a) all real numbers
    (b) $(0, \infty)$
    (c) $(-\infty, 0)$
    (d) $(2, \infty)$
    (e) None of the above

21. The solution set for $3x+2 \leq 5x+10$ is

    (a) $x \geq 4$
    (b) $x \leq 4$
    (c) $x \leq -4$
    (d) $x \geq -4$
    (e) None of the above

22. The solution set for $x^3+2x=0$ is

    (a) $\{0, -2\}$
    (b) $\{0\}$
    (c) $\{-2\}$
    (d) $\{0, 2\}$
    (e) None of the above

23. The slope of the line $3y=-x+7$ is

    (a) 3
    (b) -3
    (c) $1/3$
    (d) $-1/3$
    (e) None of the above

24. The solution set for $x^2 + \pi = 0$ is

(a) $\{-\pi, \pi\}$
(b) $\{-\pi\}$
(c) $\{\pi\}$
(d) The equation has no real solution
(e) None of the above

25. The solution for $|x + 2| = 1$ is $x =$

(a) 1 only
(b) -1 only
(c) $\{1, -1\}$
(d) $\{-1, -3\}$
(e) None of the above

26. If $y = e^{3x-2}$ then $x =$

(a) $\dfrac{\ln(y) + 2}{3}$
(b) $\dfrac{\ln(y) - 2}{3}$
(c) $\dfrac{2 - \ln(y)}{3}$
(d) $\dfrac{2\ln(y)}{3}$
(e) None of the above

27. If $x, y > 0$ then $\ln\left(\dfrac{x^2}{5y^3}\right) =$

(a) $2\ln x + 5\ln y$
(b) $2\ln x + 3\ln y$
(c) $2\ln x + 5\ln y - 3\ln y$
(d) $2\ln x - \ln 5 - 3\ln y$
(e) None of the above

28. If $3^{0.5x} = 2$, then $x =$

(a) 20/3
(b) $2\log_3 2$
(c) $0.5\log_3 2$
(d) $2\log_5 2$
(e) None of the above

29. If $y = \ln(x - 4)$, then $x =$

(a) $e^y - 4$

(b) $e^y + 4$

(c) e^{4y}

(d) $4 - e^y$

(e) None of the above

30. If $5x = 20$, then $\log_4(16x) =$

(a) 4

(b) 3

(c) 40

(d) 5

(e) None of the above

Solution:

Business-MPT-Sample-2

Question Number	Solution
1	C
2	C
3	C
4	C
5	D
6	A
7	C
8	C
9	C
10	B
11	A
12	E
13	D
14	B
15	C
16	D
17	B
18	B
19	E
20	A
21	D
22	B
23	D
24	D
25	D
26	A
27	D
28	B
29	B
30	B