

THIS PLACEMENT TEST IS ONLY FOR:

- ✓ Business majors
- ✓ Design Management major

INSTRUCTIONS:

- ✓ The test consists of 30 multiple choice questions.
- ✓ Only Built-in Calculators are 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. $\sqrt[4]{\frac{x^8y^2x^{-3}}{xy^2}} =$
- (a) x^3y
 - (b) xy
 - (c) x
 - (d) x^4y
 - (e) None of the above
3. If $\sqrt{\frac{x}{x^{-7}}} = x^n$, 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 $f(x) = \frac{16 - x^2}{\sqrt{x + 2}}$ 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 $\frac{x - 4}{x + 2} = 0$, 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 $\frac{3}{x+1} =$
- (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 $\frac{-2}{y^{-2}} =$

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

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

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

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

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

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

- (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