AP Calculus AB

Sample Question Paper - 2022

Country: US | Duration: 3h 15m | Max Marks: 5-point scale | Language: English

Negative Marking: No | Total Questions: 45 | QuizVerse AI Tutor

General Instructions:

1. This paper contains 45 questions across 1 section(s): Calculus.
2. Duration: 3h 15m. Maximum marks: 5-point scale.
3. Negative marking: No.
4. Read each question carefully before answering.

Section 1: Calculus (45 Questions)

Q1. The number of ways to arrange 4 distinct objects in a circle is:

(A) 35
(B) 3490
(C) 1390
(D) 3788

Q2. The area under y = x^2 from x = 0 to x = 3 is:

(A) 192.7
(B) 40.0
(C) 151.5
(D) 58.9

Q3. lim(x->0) sin(4x)/x =

(A) 2
(B) 7
(C) 6
(D) 2

Q4. The area under y = x^4 from x = 0 to x = 3 is:

(A) 79.0
(B) 9.3
(C) 112.4
(D) 59.6

Q5. The equation of tangent to y = x^4 at x = 1 is:

(A) y = 12x - 9
(B) y = 10x - 4
(C) y = 10x - 15
(D) y = 4x - 4

Q6. The rank of the matrix [[1,2,3],[4,5,6],[7,11,12]] is:

(A) 2

(B) 1

(C) 3

(D) 0

Q7. The mean of a binomial distribution with n = 39 and p = 0.8 is:

(A) 12.3

(B) 6.0

(C) 26.7

(D) 7.0

Q8. The derivative of x^5 sin(x) at x = pi is:

(A) 17.03

(B) 14.37

(C) 14.99

(D) -4.42

Q9. If det(A) = 6 and A is 3x3, then det(2A) =

(A) 14

(B) 16

(C) 74

(D) 77

Q10. The number of ways to arrange 7 distinct objects in a circle is:

(A) 807

(B) 358

(C) 2042

(D) 2306

Q11. The area under y = x^4 from x = 0 to x = 2 is:

(A) 1.4

(B) 196.1

(C) 194.8

(D) 138.7

Q12. If z = 3 + 2i, then |z| =

(A) 4.66

(B) 6.81

(C) 2.37

(D) 1.88

Q13. lim(x->0) sin(7x)/x =

(A) 7

(B) 3

(C) 6

(D) 3

Q14. The mean of a binomial distribution with n = 48 and p = 0.3 is:

(A) 17.9

(B) 31.3

(C) 17.8

(D) 10.8

Q15. Integral of (x^2 + 8) dx from 0 to 4 equals:

(A) 75

(B) 66

(C) 79

(D) 51

Q16. The area under y = x^2 from x = 0 to x = 5 is:

(A) 37.6

(B) 152.6

(C) 94.0

(D) 65.9

Q17. If det(A) = 4 and A is 3x3, then det(2A) =

(A) 73

(B) 64

(C) 94

(D) 95

Q18. The number of ways to arrange 5 distinct objects in a circle is:

(A) 4397

(B) 1700

(C) 4168

(D) 3023

Q19. The distance between parallel lines 5x + 3y = 5 and 4x + 4y = 18 is:

(A) 2.24

(B) 4.57

(C) 1.82

(D) 2.71

Q20. The rank of the matrix [[1,2,3],[4,5,6],[9,8,12]] is:

(A) 1

(B) 2

(C) 0

(D) 3

Q21. lim(x->0) sin(4x)/x =

(A) 5

(B) 4

(C) 5

(D) 5

Q22. The derivative of x^4 sin(x) at x = pi is:

(A) -11.93

(B) -2.21

(C) -3.20

(D) 17.45

Q23. If det(A) = 6 and A is 3x3, then det(2A) =

(A) 5

(B) 10

(C) 90

(D) 45

Q24. If z = 1 + 4i, then |z| =

(A) 1.55

(B) 9.72

(C) 8.04

(D) 8.81

Q25. The eccentricity of the ellipse x^2/18 + y^2/16 = 1 is:

(A) 0.61

(B) 0.78

(C) 0.82

(D) 0.68

Q26. If z = 3 + 3i, then |z| =

(A) 3.22

(B) 2.08

(C) 2.21

(D) 2.65

Q27. The probability of getting exactly 3 heads in 6 tosses of a fair coin is:

(A) 32/64

(B) 33/64

(C) 21/32

(D) 15/256

Q28. lim(x->0) sin(5x)/x =

(A) 1

(B) 7

(C) 6

(D) 6

Q29. Integral of (x^4 + 8) dx from 0 to 1 equals:

(A) 40

(B) 88

(C) 64

(D) 18

Q30. The equation of tangent to y = x^2 at x = 3 is:

(A) y = 5x - 19

(B) y = 2x - 4

(C) y = 4x - 11

(D) y = 9x - 4

Q31. The rank of the matrix [[1,2,3],[4,5,6],[8,11,10]] is:

(A) 3

(B) 1

(C) 2

(D) 0

Q32. If z = 4 + 2i, then |z| =

(A) 6.05

(B) 1.38

(C) 5.05

(D) 3.04

Q33. The rank of the matrix [[1,2,3],[4,5,6],[7,10,12]] is:

(A) 3

(B) 1

(C) 0

(D) 2

Q34. If det(A) = 9 and A is 3x3, then det(2A) =

(A) 99

(B) 3

(C) 72

(D) 34

Q35. The area under y = x^2 from x = 0 to x = 4 is:

(A) 87.4

(B) 121.1

(C) 96.3

(D) 20.4

Q36. The sum of first 44 terms of AP with a = 4, d = 3 is:

(A) 3604

(B) 3308

(C) 1432

(D) 4425

Q37. The rank of the matrix [[1,2,3],[4,5,6],[9,11,9]] is:

(A) 3

(B) 2

(C) 0

(D) 1

Q38. The number of ways to arrange 3 distinct objects in a circle is:

(A) 371

(B) 103

(C) 2738

(D) 3417

Q39. The probability of getting exactly 3 heads in 6 tosses of a fair coin is:

(A) 27/64

(B) 11/128

(C) 31/32

(D) 42/32

Q40. Integral of (x^4 + 6) dx from 0 to 3 equals:

(A) 54

(B) 34

(C) 90

(D) 88

Q41. lim(x->0) sin(3x)/x =

(A) 6

(B) 1

(C) 2

(D) 1

Q42. The derivative of x^5 sin(x) at x = pi is:

(A) -2.13

(B) -1.72

(C) 4.53

(D) -19.42

Q43. The eccentricity of the ellipse x^2/6 + y^2/9 = 1 is:

(A) 0.77

(B) 0.49

(C) 0.40

(D) 0.49

Q44. The equation of tangent to y = x^4 at x = 1 is:

(A) y = 12x - 3

(B) y = 5x - 20

(C) y = 11x - 17

(D) y = 4x - 14

Q45. The equation of tangent to y = x^2 at x = 1 is:

(A) y = 3x - 12

(B) y = 11x - 3

(C) y = 5x - 9

(D) y = 8x - 6

Answer Key

Q1: (B)	Q2: (D)	Q3: (A)	Q4: (B)	Q5: (B)
Q6: (A)	Q7: (C)	Q8: (D)	Q9: (B)	Q10: (A)
Q11: (A)	Q12: (D)	Q13: (A)	Q14: (B)	Q15: (D)
Q16: (D)	Q17: (C)	Q18: (D)	Q19: (A)	Q20: (B)
Q21: (B)	Q22: (D)	Q23: (D)	Q24: (B)	Q25: (D)
Q26: (D)	Q27: (C)	Q28: (C)	Q29: (B)	Q30: (D)
Q31: (C)	Q32: (A)	Q33: (D)	Q34: (D)	Q35: (A)
Q36: (A)	Q37: (B)	Q38: (B)	Q39: (C)	Q40: (B)
Q41: (A)	Q42: (D)	Q43: (B)	Q44: (C)	Q45: (D)