

CDS Exam 2016 Mathematics Sample Paper Part – 4

34. If both 112 and 33 are factors of the number $a * 4^3 * 6^2 * 13^{11}$ what is the smallest possible value of 'a'?

- (A) 121
- (B) 3267
- (C) 363
- (D) 33

35. $10^{25}-7$ is divisible by ____

- (A) 2
- (B) 3
- (C) 9
- (D) Both (2) and (3)

36. If m and n are whole numbers and $m^n = 196$, what is the value of $(m-3)^{(n+1)}$?

- (A) 2744
- (B) 1
- (C) 121
- (D) 1331

37. What is the value of $(2 \times 4 \times 5)^{5n}$

- (A) $2^{5n} + 4^{5n} + 5^{5n}$
- (B) $(40^5)^n$
- (C) $(40)^{5n}$
- (D) $(40n)^5$

38. If $5^{(a+b)} = 5 \times 25 \times 125$, what is $(a+b)^2$

- (A) 12
- (B) 16

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(C) 34

(D) 36

39. $10^{222} + 10^{220} = ?$

(A) 10

(B) 100

(C) 1000

(o)10000

40. $(132)^2 \times (132)^2 = (132)^{115}$

(A) 3

(B) 3.5

(C) 4

(D) 43

41. Convert the following SOP expression to an equivalent POS expression.

$$ABC + A\bar{B}\bar{C} + A\bar{B}C + AB\bar{C} + \bar{A}\bar{B}C$$

(A) $ABC + A\bar{B}\bar{C} + A\bar{B}C + AB\bar{C} + \bar{A}\bar{B}C$

(B) $(A + B + C)(A + \bar{B} + C)(A + \bar{B} + \bar{C})$

(C) $(\bar{A} + \bar{B} + \bar{C})(A + \bar{B} + C)(A + \bar{B} + C)$

(D) $(A + B + C)(\bar{A} + B + \bar{C})(A + \bar{B} + C)$

42. Applying DeMorgan's theorem to the expression \overline{ABC} , we get

(A) $\bar{A} + \bar{B} + \bar{C}$

(B) $A + \bar{B} + C$

(C) $A + \bar{B} + \bar{C}$

(D) $A(B + C)$

43. Determine the values of A, B, C, and D that make the product term $\bar{A}\bar{B}\bar{C}D$ equal to 1

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(A) $A = 0, B = 2, C = 0, D = 1$

(B) $A = 0, B = 0, C = 0, D = 1$

(C) $A = 1, B = 0, C = 1, D = 0$

(D) $A = 0, B = 0, C = 1, D = 0$

44. $AB + ABC = AC$

(A) True

(B) False

45. if $6^m = 46656$, What IS the value of 6^{m-2}

(A) 36

(B) 7776

(C) 216

(D) 1296


46. A right triangle with sides 3cm, 4cm and 5 cm is rotated the side of 3 an to form a cone. The volume of the cone so formed is:

(A) $12 \pi \text{ cm}^3$

(B) $15 \pi \text{ cm}^3$

(C) $16 \pi \text{ cm}^3$

(D) $20 \pi \text{ cm}^3$

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