Q1. / 1 mark   Q1.In 2D- space, the following system $y = x + 1$ and $y = x - 1$ represents:

Answer

| A | ☐ | A circle |

| B | ☐ | Intersecting lines |

| C | ✓ | Parallel lines |

| D | ☐ | A point |

Q2. / 1 mark   Q2.A system of equestions that has no solution, it is said to be:

Answer

| A | ✓ | Independent |

| B | ☐ | Dependent |

| C | ☐ | Inconsistance |

| D | ☐ | Consistent |

Q3. / Q3.The graphs of the two equations and , such that

1   a and A have different signs and that the quantities

mark and are both negative,

Answer

| A | ☐ | intersect at two points |

| B | ✓ | intersect at one point |

| C | ☐ | do not intersect |

Q4. / 1 mark Q4.Which of the following is true when a, b, and c are different real numbers?

Answer

A ☐ $a - b = b - a$

B ☐ $a(b - c) = b(c - a)$

C ☐ $b - c = c - b$

D ☑ $ab = ba$

Q5. / 1 mark Q5.When a parabola represented by the equation y - 2x 2 = 8 x + 5 is translated 3 units to the left and 2 units up, the new parabola has its vertex at :

Answer

A ☐ (-5 , -1)

B ☑ (-5 , -5)

C ☐ (-1 , -3)

Q6. / 1 mark Q6.The graphs of the two linear equations a x + b y = c and b x - a y = c, where none of the coefficients a, b, c is equal to zero,

Answer

A	☐	are parallel

B	☐	intersect at the point (0,0)

C	☐	intersect at two points

Q7. / 1 mark Q7.Given two real numbers a and b we define the complex number z as z = a +ib. Then z = 4i is:

Answer

A	☐	Not a complex number

B	☐	A complex number with only real part

C	✓	A complex number with only imaginally part

D	☐	none of them is correct

Q8. / 1 mark Q8.If Logarithm of 1/8 in base x equals -3/2 , then x is equal to

Answer

A ☐ -4

B ☐ 4

C ☑ 1/4

D ☐ 10

Q9. / 1 mark Q9.Bearings are always measured in:

Answer

A ☑ Clockwise direction

B ☐ Anti clockwise direction

C ☐ Vertical direction

D ☐ Horizantal direction

Q10. / 1 mark Q10. 20 percent (20 %) of 2 is equal to

Answer

- A ☐ 20
- B ☐ 4
- C ☑ 0.4
- D ☐ 0.04

Q11.
/ 1
mark

Q11.If a fair coin is tossed, the probability that it will land heads up is 1/2 . In four successive tosses, a fair coin lands heads up each time. What is likely to happen when the coin is tossed a fifth time?

Answer

A	☐	It is more likely to land tails up than heads up.
B	☐	It is more likely to land heads up than tails up.
C	✓	It is equally likely to land heads up or tails up.
D	☐	More information is needed to answer the

Q12. / 1 mark Q12.If Logarithm of x in base 4 equals 12 , then Logarithm of x/4 in base 2 equal to :
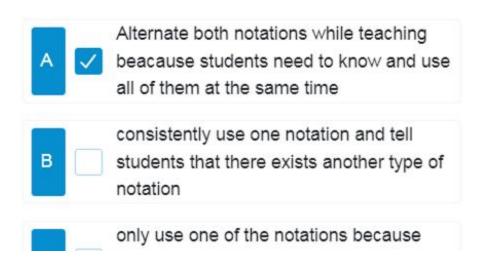
Answer

A	✓	11
B	☐	48
C	☐	-12
D	☐	22

Q13. / 1 mark Q13.If x + 3y = 11 and 2x + 3y = 13, then the value of y is:

Answer

A	☐	-2
B	☐	2
C	☐	-3
D	✓	3

Q14. Q14.Given the following ordered pairs (3, 6) , (6, 15)
/ 1 , (8, 21), Which of these describes how to get the
mark second number from the first number in every
ordered pair above?

Answer

| A | ☐ | Add 3 |

| B | ☐ | Multiply by 2 |

| C | ☐ | Multiply by 2 and then add 3 |

| D | ✓ | Multiply by 3 and then subtract 3 |

Q15. Q15.In Mathematics, there are different notation for
/ 1 open intervals, different notation of vectors, different
mark notation for ratio, etc. All of these notations are
universal and internationally used. During my
Mathematics lessons delivery , I will:

Answer

| A | ✓ | Alternate both notations while teaching beacause students need to know and use all of them at the same time |

| B | ☐ | consistently use one notation and tell students that there exists another type of notation |

| | ☐ | only use one of the notations because |

Q16.
/ 1
mark

Q16.The probability that an electronic device produced by a company does not function properly is equal to 0.1. If 10 devices are bought, then the probability, to the nearest thousandth, that 7 devices function properly is

Answer

A	☐	0.057
B	✓	0.478
C	☐	0.001
D	☐	0

Q17. / 1 mark Q17.The period of 2 sin x cos x is

Answer

A ☐ 4 π^2

B ☐ 2 π

C ☑ 4 π

D ☐ π

Q18. / 1 mark Q18.If f(x) is an odd function, then the absolute value of f(x) is:

Answer

A ☐ an odd function

B ☑ an even function

C ☐ neither odd nor even

D ☐ even and odd

Q19. /
1
mark Q19.A Six-Sided Die is rolled once. What is the Probability that the number rolled is an even number greater than 2?

Answer

A ✓ 1/3

B ☐ 1/2

C ☐ 1

D ☐ 0

Q20. / 1
mark Q20.A number system with the base of 2 is called?

Answer

A ☐ octal

B ✓ Binary

C ☐ Decimal

D ☐ None is correct

Q21. / 1 mark Q21.The Sum of 2a + b + 5c and -5a – 2b + 3c is:

Answer

A	☐	3a + b + 8c
B	☐	-3a + b + 8c
C	☐	3a – b + 8c
D	☑	-3a – b + 8c

Q22. / 1 mark Q22.If Expression 12c + 1b + 7d is subtracted from 39c + 40b + 45d. Then answer will be

Answer

A	☑	27c+39b + 38d
B	☐	27c-39b + 38d
C	☐	27c-39b - 38d
D	☐	27c+39b - 38d

Q23. Q23.If Following Pattern Is Considered $2^2 + 1 = 5$, $3^2 + 1 = 10$, $4^2 + 1 = 17$, $5^2 + 1 = 26$, ..., Then the value of x in $x^2 + 1 = 170$ will be:

/ 1 mark

Answer

A	☐	31
B	✓	13
C	☐	3
D	☐	12

Q24. / 1 mark Q24.In following Sequence 79, 76, 73, 70, next Three numbers in Sequence are:

Answer

A	☐	769,67,64
B	☐	61,64,67
C	✓	67,64,61
D	☐	69,64,61

Q25. / 1 mark Q25.Two Trigonometric Ratios whose values cannot be greater than 1 are?

Answer

A ☐ Tangent And Cosine

B ☐ Tangent And Ssine

C ☑ Sine And Cosine

D ☐ None is correct

Q26. / 1 mark Q26.On A-Line, Sum of adjacent angles is equal to:

Answer

A ☐ 90°

B ☑ 180°

C ☐ 45°

D ☐ 150°

Q27. / 1 mark Q27.How many tangents can be drawn to a circle from an external point ?

Answer

A ☐ 0

B ☑ 1

C ☐ 2

D ☐ 3

Q28. / 1 mark Q28.A triangle is a geometric shape and it is:

Answer

A ☐ a one-dimensional shape

B ☑ a two-dimensional shape

C ☐ a three-dimensional shape

D ☐ a four-dimensional shape

Q29. / 1 mark Q29.The meaning of the word "Gradient" is

Answer

| A | ☐ | The slope line |

| B | ☐ | The tangent line |

| C | ☐ | The intersecting line |

| D | ☑ | The steepness of a slope |

Q30. / 1 mark Q30.A graph in the form of x = a is called:

Answer

| A | ☐ | A straight vertical line |

| B | ☑ | A straight horizantal line |

| C | ☐ | A straight oblique line |

| D | ☐ | A curved line |

Q31. / Q31.As a Mathematics teacher, I know and
3 understand that to possess a well prepared lesson
marks plan will help me to:

Answer

| A | ☐ | only convince my school leaders that I'm always prepared ahead. |

| B | ☐ | only deliver my lesson and convince my students |

| C | ✓ | well deliver my lesson by respecting each step and timing, facilitating students to progressively achieve the lesson instructional objective |

Q32. / 3 Q32.The solution set of the following system
marks of equations is:

Answer

| A | ☐ | $S=\{(3,1,2)\}$ |

| B | ✓ | $S=\{(1,2,3)\}$ |

| C | ☐ | $S=\{(2,1,3)\}$ |

| D | ☐ | $S=\{(2,3,1)\}$ |

Q33. / 3 marks Q33. The numbers in the sequence 7, 11, 15, 19, 23, ... increase by four. The numbers in the sequence 1, 10, 19, 28, 37, ... increase by nine. The number 19 is in both sequences. If the two sequences are continued, what is the next number that is in BOTH the first and the second sequences?

Answer

A ☐ 27

B ☐ 37

C ☐ 46

D ✓ 55

Q34. /
3
marks

Q34. For x greater than or equal to zero and less than or equal to 2 π, sin x and cos x are both decreasing on the intervals

Answer

A	☐	$(0 , \pi/2)$
B	☐	$(\pi/2 , \pi)$
C	☑	$(\pi , 3\pi/2)$
D	☐	$(3\pi/2 , 2\pi)$

Q35. / 3 marks Q35. The derivative of the function is :

Answer

A	☑	$2(x+1)$
B	☐	$x + 1$
C	☐	$x2 +1$
D	☐	$2x$

Q36. / 3 marks Q36.Five different books (A, B, C, D and E) are to be arranged on a shelf. Books C and D are to be arranged first and second starting from the right of the shelf. The number of different orders in which books A, B and E may be arranged is

Answer

- **A** ☐ 5!
- **B** ☑ 3!
- **C** ☐ 2!
- **D** ☐ 3! 2!

Q37. / Q37.Point A has the Coordinates (2,2). What are

3 the Coordinates of its Image Point if it is Translated

marks 2 Units Up and 5 Units to the Left, and Reflected in the X-Axis?

Answer

| A | ✓ | (-3,-4) |

| B | ☐ | (-3,4) |

| C | ☐ | (2,-4) |

| D | ☐ | (3,-4) |

Q38. /
3
marks

Q38. The population of a country increased by an average of 2 percent (2%) per year from 2000 to 2003. If the population of this country was 2 000 000 on December 31, 2003, then the population of this country on January 1, 2000, to the nearest thousand would have been

Answer

A ☐ 1 846 000

B ☑ 1852000

C ☐ 1000000

D ☐ 1500000

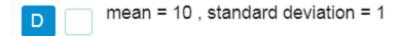**Q39. / 3 marks** Q39.The graphs of the two linear equations a x + b y = c and b x - a y = c, where none of the coefficients a, b, c is equal to zero,

Answer

A ☐   are parallel

B ☐   intersect at the point (0,0)

C ☐   intersect at two points

D ☑   perpendicular

Q40. / Q40.The mean of a data set is equal to 10 and its

3 standard deviation is equal to 1. If we add 5 to each

marks data value, then the mean and standard deviation

become

Answer

A ☐ mean = 15 , standard deviation = 6

B ☐ mean = 10 , standard deviation = 6

C ✓ mean = 15 , standard deviation = 1

D ☐ mean = 10 , standard deviation = 1

Q41. / 4 marks Q41.Complex Numbers of the form Z = a + bi represent points in a two dimensional complex plane that are referenced to two distinct axes . Q41. A. The Horizantal axis is called and noted:

Answer

A	☐	Real axis Im(Z)
B	☐	Real axis Re(Z)
C	☑	Imaginary axis Im(Z)
D	☐	Imaginary axis Re(Z)

Q42. / 4 marks Q41. B. The Veritical axis is called and noted:

Answer

A	☐	Real axis Im(Z)
B	☑	Real axis Re(Z)
C	☐	Imaginary axis Im(Z)
D	☐	Imaginary axis Re(Z)

Q43. / 4 marks Q41. C. The complex number written in the form of $Z = \cos x + i \sin x$ is known as :

Answer

| A | ✓ | Polar form |

| B | ☐ | Algebraic or rectangular form |

| C | ☐ | Exponential form |

| D | ☐ | Geometric form |

Q44. / 4 marks Q41. D. The modulus of the complex number $Z = 4-3i$ is :

Answer

| A | ☐ | 25 |

| B | ☐ | square root of 7 |

| C | ✓ | 5 |

| D | ☐ | -5 |

marks continuous on set of real numbers R. Q46.A. The function f(x) takes:

Answer

A	✓	Always none negative values

B	☐	Sometimes none negative values

C	☐	Most of the time none negative values

D	☐	Negative values