ST. STEPHEN'S GIRLS' COLLEGE
Mid-Year Examination 2019 – 2020

Form 1   **LC, LL, JSCL, CYN**

176 students

Mathematics
Time Allowed : 1 hour
Question/Answer Paper

Please read the following <u>instructions</u> very carefully.

Class	
Class No.	
Name	
Division	

1. This paper consists of TWO sections, A and B.

2. Write your class, class number, name and division in the spaces provided on this cover.

3. This paper carries 100 marks. Attempt ALL questions in this paper.   Write your answers in the spaces provided in this Question/Answer Paper.

4. The diagrams in this paper are not necessarily drawn to scale.

| For Markers' Use Only	
1 – 24.	(58)
25.	(6)
26.	(6)
27.	(6)
28.	(6)
29.	(6)
30.	(5)
31.	(7)
TOTAL	(100)

Section A (58%)

All rough work should be done on the rough work paper provided, but will not be marked.

		Answers	**Marks**
1.	Arrange –6, +0.715, –5, +1, +0.7 in ascending order.	1. _____	2
2.	Find the L. C. M. of $3^2 \times 5$ and $2^2 \times 3$.	2. _____	2
3.	Evaluate $-10 + \dfrac{8}{-1+3}$.	3. _____	2
4.	The square of –12 is divided by the cube of 2. Find the quotient.	4. _____	3
5.	Determine whether each of the following statements is true or false. Circle the correct answer. (a) $a \times a \times a = 3a$ (b) $(-a)^2 = (-a^2)$ (c) $-3(a + 5) = -3a + 15$	5. (a)　　True　/　False (b)　　True　/　False (c)　　True　/　False	1 1 1
6.	Represent the following word phrase by an algebraic expression: Subtract *b* from *a*, and then divide the difference by the square of *c*.	6. _____	3
7.	Solve $-3x = 2(3x - 9)$.	7. $x = $ _____	2
8.	John buys *x* books. The price of each book is $42. He gives two $100 notes to the cashier and gets $32 change. Find *x*.	8. $x = $ _____	2
9.	Mary has twelve $5 and $2 coins in her purse. If the total value of the coins is $39, find the number of $2 coins.	9. _____	3
10.	Helen's weight is $\dfrac{3}{5}$ of that of her sister. If the difference of their weight is 14 kg, find the weight of Helen.	10. _____	3
11.	The sum of three consecutive even integers is –108. Find the largest integer.	11. _____	3

Subtotal: /28

12. The time t (in minutes) needed for a train to travel n stations is given by the formula $t = 3(n + 1) - 2$. Find the time needed for the train to travel 12 stations.

12. _____ 2

13. Set up an inequality to represent each of the following.
    (a) The result of adding 5 to square of x is more than 13.
    (b) The result of dividing 20 by the sum of y and 4 is not less than 9.

13.
    (a) _____ 2

    (b) _____ 2

14. It is given that y is a function of x and $y = \dfrac{7 - x}{x + 1}$, where $x \neq -1$.   If $x = -3$, find the value of y.

14. _____ 2

2

15. Which of the following angles is the largest?

    A. $\dfrac{1}{6}$ of a round angle

    B. $\dfrac{4}{5}$ of a straight angle

    C. $\dfrac{4}{3}$ of a right angle

15. _____ 2

16. In the figure, *ABCDE* is a regular pentagon and *BFE* is a straight line. Find and name the following triangles.
    (a) An isosceles triangle
    (b) An acute-angled triangle

16.
    (a) _____ 1

    (b) _____ 1
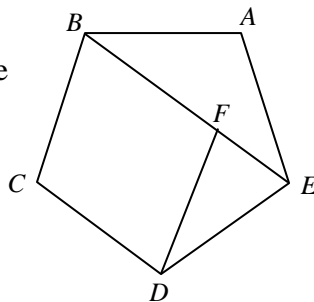
17. Identify and draw the uniform cross-section of the following solid.

17. 2

_____
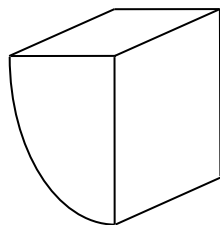
18. What percentage of 60 minutes is 150 minutes?

18. _____ 2

19. If 5% of n is 18, find the value of n.

19. _____ 2

20. The housing subsidy is changed from $3000 to $3500. Find the percentage change of the subsidy. (*Your answer must be exact.*)

20. _____ 2

Subtotal: **/20**

P. 3

21. A packet of sweets is shared among Betty and Cindy. The number of Cindy's sweets is 25% more than that of Betty. It is given that Betty has 240 sweets. Find the total number of sweets.

21. _____   3

22. In a shop, all items are sold at 60% off. If the marked price of a jacket is $1080, find the selling price of the jacket.

22. _____   2

23. David sold a mobile phone at a loss of 12% for $3168. What is the cost price of the mobile phone?

23. _____   3

24. The original base of a triangle is 10 cm and its height is 6 cm. If the base is decreased by 5%, find the area of the new triangle.

24. _____   2

Subtotal: | **/10**

Section B (42%)

25. Mrs. Lee gains $120 in selling each dress, loses $180 in selling each shirt and gains $70 in selling each hat.
    (a) If Mrs. Lee sells 15 dresses, 30 shirts and 20 hats, find the overall profit or loss.(3 marks)
    (b) If Mrs. Lee sells $2x$ dresses, x shirts and 15 hats, is it possible that she gets an overall profit of $3000? Explain your answer. (3 marks)

26. (a) Simplify $2a \times 6 - 10 + 8a \div 2 + 6$. (3 marks)

(b) Solve $\dfrac{y}{5} - 6 = \dfrac{3y-2}{4}$. (3 marks)

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27. A string of 242 cm is cut into two parts. The first part is 6 cm longer than the second part.
    (a) Find the length of the second part. (2 marks)
    (b) The second part of the string is then bent into a rectangle such that its length is 11 cm longer than its width.
        (i) Find the width of the rectangle. (2 marks)
        (ii) Hence, find the area of the rectangle. (2 marks)

28. Mary has \$120. She buys x bags of watermelon candy and some bags of chocolate. The prices of a bag of watermelon candy and a bag of chocolate are \$11 and \$15 respectively. It is given that the total number of bags of watermelon candy and chocolate is 10.
    (a) Use an inequality to represent the above situation. (2 marks)
    (b) Can Mary buy 7 bags of watermelon candy? Explain your answer. (3 marks)
    (c) Write down a possible value of x. (1 mark)

29. In the figure, *ADC* is a straight line. Find x and y. (6 marks)

30. A test consists of two sections, A and B. Section A carries 40% of the full marks. The full marks of the test are 80.

    (a) Find the total marks of Section B. (2 marks)

    (b) If Mary got 30 marks in Section A and $33\frac{1}{3}\%$ of the total marks of Section B, what percentage of the full marks are Mary's total marks? (3 marks)

31. A hawker bought 80 apples for $200. He sold 60% of the apples at $4 each, 30% of the apples at $2.5 each and the rest at $2 each.

(a) Find the number of apples that are sold at $4 each.   (1 mark)

(b) Find the total amount received from selling all the apples.   (3 marks)

(c) The hawker claims that the profit per cent from selling all the apples can exceed 30%. Do you agree? Explain your answer.   (3 marks)

--- End of Paper ---