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| **NAME** |  |
| **SUBJECT** |  **MATHEMATICS** | **CLASS** | **JSS** 3 | **DURATION** |  **2 HOUR** |

***Part A: Multiple choice (50 marks)***

Answer all questions: ***Each*** question is followed by ***four*** options lettered A to D. Find out the correct option for ***each*** question and ***shade in pencil*** on your answer space which bears the same letter as the option you have chosen. Give only ***one*** answer to ***each*** question.

1. Find the perimeter of a rectangle with length 8cm and breathe 4cm.

1. 12cm
2. 14cm
3. 16cm
4. 24cm

2. A machine produces 800 pins in 4 days. How many pins will it produce in 12days?

1. 200
2. 267
3. 1 600
4. 2 400

3. Calculate the perimeter of the shape below.

4cm

1. 2cm
2. 4cm
3. 8cm
4. 12cm
5. 16cm

4. Find the value of y in the figure

 below, correct to one decimal place.(sine 25=0.42,tan 25= 0.47,Cos 25=0.707)

10cm

250

ycm

1. 2.0cm
2. 4.7cm
3. 6.3cm
4. 8.3cm

5. Find the Mean of 11, 13, 15, 17
A. 14
B. 16
C. 13
D. 15

6. Find the value of x in the figure below

3240

x

1. 180
2. 240
3. 360
4. 420

7. Find the Median of 6, 9, 8, 10, 7
A. 7
B. 8
C. 9
D. 6

8. Find the Range of 13, 11, 15, 12
A. 4
B. 3
C. 2
D. 5

9. The bar chart displays the performance of JSS3 in their entry test.how many students sat for the test?

A.160

B.170

C.175

D.180.

10. Find the square root of 9 x 16 x 25

A.3600

B.360

C.60

D.25

11. The area of the trapezium below is 46 cm2. Find the height

8m

15 m

 A. 4 m

 B. 19 m

 C. 19 m

 D. 23 m

12. Arrange in descending order of magnitude$ \frac{3}{5}$, $\frac{1}{2}$, $\frac{4}{7}$, $\frac{5}{9}$

 A. $\frac{3}{5}$, $\frac{4}{7}$, $\frac{1}{2}$, $\frac{5}{9}$

 B. $\frac{1}{2}$, $\frac{4}{7},\frac{3}{5}$, $\frac{5}{9}$

 C. $\frac{3}{5}$, $\frac{4}{7}$, $\frac{5}{9},$ $\frac{1}{2}$

 D. $ \frac{4}{7},\frac{3}{5},\frac{1}{2}$, $\frac{5}{9}$

 13. Multiply 100110two by 111two

 A. 100001010two

 B. 10001010two

 C. 100100two

 D. 101000two

 14. Given that y= 3x + 13, find the value of x in 2x + 3y =17

 A. -2

B. -1

C. 1

D. 2

 15. Factories 8y – 32y3 completely

 A. 8y(1-4y2)

 B. 8y(1+4y2)

 C. y(1-4y2)

 D. 8y(1-y2)

16. The angle of elevation of the top of a tower form a point 100m away is 450. What is the height of the tower to the nearest meters?

 A. 50m

 B. 58m

 C. 70m

 D. 87m

17. What does the construction below represent?

A. 900

 B. 1350

 C. 600

D. 450

 18. Two similar cardboards have areas of 24cm2 and 150cm2. If the length of the bigger one is 10cm, what is the length of the smaller one?

 A. 4 cm

 B. 6 cm

 C. 8cm

 D. 1.6cm

19. Calculate |DC|using the similar shapes given below

6 cm

12 cm

8 cm

Q

P

R

C

D

B

 A. 4cm

 B. 6 cm

 C. 8cm

 D. 9cm

20. Find |RS| in the figure below

6 cm

4 cm

8 cm

E

R

F

G

S

 A. 4$\frac{4}{5}$cm

B. 6cm

 C. 7$\frac{1}{2}$ cm

 D. 10cm

21. Which of the following method(s) is/are correct for constructing an angle 450 at P?

**I**

**II**

**III**

 A. I only

 B. II only

 C. III only

 D. I and II only

 E. I and III only

22. Give that x varies inversely as the square of y and varies directly as z.If x=4,y=1,z=1.find x if y=3,z=2

A.1

B.$\frac{1}{3}$

C.$\frac{1}{2}$

D.$\frac{8}{9}$

 23. Find the value of x in the diagram below

450

2x + 300

900 - x

1. 150
2. 200
3. 250
4. 300

24 If there are 18 triangles in a polygon, how many sides has the polygon?

A. 10

 B. 12

 C. 16

 D. 20

25.. A sector of a circle as an area of 15.4cm2. If the radius of the circle is 6cm, calculate angle of the sector

 A. 330

 B. 410

 C. 490

 D. 980

 E. 1470

 26.A fair die is thrown once. What is the probability of getting a prime number?

 A. $\frac{3}{4}$

 B. $\frac{2}{3}$

 C. $\frac{1}{2}$

 D. $\frac{1}{4}$

27. The area of a triangle is 52cm2. If the base of the triangle is 8cm, find its height

 A. 13cm

 B. 7.5 cm

 C. 23.0cm

 D. 26.0cm

 If 3y = - 3x

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Y | A | b | C | D | E | f | g | h | i | j |

28. Find the value of **g + j**

 A. -18

 B. -9

 C. -3

 D. 9

 29. Given that I=$\frac{PRT}{100}$ , make P the subject of the formula

 A. P=$\frac{100I}{RT}$

 B. P=$\frac{100IP}{RT}$

 C. P=$\frac{100R}{IT}$

 D. P=$\frac{100I}{TR}$

 30. Find the perimeter of a parallelogram whose base is 6cm and side 5 cm.

 A. 60 cm

 B. 35 cm

 C. 30 c

D. 22 cm

 31. If the volume of a cube is 27 cm3, find one of its sides.

 A. 3 m

B. 6 m

C. 9 m

 D. 18 m

 32. Calculate the value of y in the diagram below ( tan 30o= 0.7813,cos 30o= 0.8660 sine 30o= 0.5)

y

12cm

300

1. 3 cm
2. 6 cm

C. 12 cm

 D. 24 cm

 33. The area of the trapezium below is 46 cm2. Find the height

8m

15 m

 A. 4 m

 B. 19 m

 C. 19 m

 D. 23 m

 34. Calculate the circumference of a circle whose radius is 7cm (take$π=\frac{22}{7}$)

 A. 22 cm

 B. 36 cm

 C. 44 cm

 D. 154 cm

35. Calculate the area of the diagram below.

12 cm

6 cm

9 cm

 A. 15 cm2

 B. 30 cm2

 C. 81 cm2

 D. 60 cm2

9.36. A rectangle and a square have the same perimeter. If the rectangle is of length 8cm and breath 6cm, find the length of the square.

 A. 4 cm

 B. 7 cm

 C. 8 cm

 D. 14 cm

 37. A plastic factory produces 1800 plastics in 40 hours. What is the production rate per hour?

1. 40
2. 45
3. 80
4. 90

38. Which of the following is/ are not method of solving simultaneous

equation

1. Elimination
2. substitution
3. graphical
4. use of formula

A.i only

B.ii only

C.iii only

D.iv only

39 The circumference of a circle is 88cm. find its radius (Take $π= \frac{22}{7}$)

 A. 7 cm

 B. 8 cm

 C. 14 cm

 D. 36 cm

40. Find the square root of $2\frac{47}{121}$

 A. $1\frac{4}{11}$

 B. $1\frac{5}{11}$

 C. $1\frac{6}{11}$

 D. $2\frac{5}{11}$

 41. In the diagram below, calculate the value of x + y

620

x

y

640

A. 520

 B. 640

 C. 1160

 D. 1280

 E. 1700

42. Calculate the volume of a cylinder of height 14cm and radius 3cm

1. 396cm3
2. 264 cm3
3. 198 cm3
4. 172 cm3
5. 132 cm3

43. In the diagram below, find the value of |QT|

T

Y

Q

P

X

4cm

12cm

9cm

1. 2
2. 3
3. 4
4. 5
5. 16

44. The table below gives the ages of a group of students in a class

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | 11 | 12 | 13 | 14 | 15 |
| y | 2 | 6 | 5 | 3 | 2 |

How many students are in the class?

1. 18
2. 36
3. 47
4. 58
5. 65

45. Find the rage of the following set of numbers: 63, 49,70, 50,60,67,45, 62,55,59

1. 25
2. 45
3. 55
4. 58
5. 70

46. The chance of Magaji passing an Examination is$\frac{3}{7}$. What is the probability of failing the same examination?

A. $\frac{4}{7}$

B. $\frac{1}{2}$

C. $\frac{3}{7}$

D. $\frac{2}{7}$

E. 0

47. A fair of die is thrown once. Find the probability of getting a seven.

A. 0

B. $\frac{1}{2}$

C. $\frac{2}{3}$

D. $\frac{1}{2}$

E. $\frac{3}{44}$

48. If 25% a number is 75, find the number

A. 700

B. 600

C. 500

D. 400

E. 300

49. Increase 2800kg by 21%

A. 388kg

B. 488kg

C. 3388kg

D. 33880kg

50. If 2x + 3y =7 and x + y = 6, find y

 A. -16

 B. -5

 C. 6

 D. 11

51. Factorize mn – pq + pn –qm completely.

 A. (n+q)(m+p)

 B. (n+q)(m-p)
C. (n-q)(m+p)

 D. (n-q)(m-p)

52. Find the product of 9 and the positive difference between 7 and 16

 A. 9

 B. 18

C. 47

D. 81

53. Factorize y2 + 6y -27

 A. (y-9)(y-3)

 B. (y-9)(y+3)

 C. (y+1)(y-27)

 D. (y+9)(y-3)

54. If 20 is the mean of 18, 23, x, 22, and 20. Find x

 A. 16

 B. 17

 C. 18

 D. 20

55. The angle of elevation of the top of a tower form a point 100m away is 450. What is the height of the tower to the nearest meters? ( tan 45o= 1,cos 45o= 0.7071 sine 45o= 0.7071)

 A. 50m

 B. 58m

 C. 70m

 D. 87m

56. Find the value of x in the figure below to 2 decimal places ( tan 64o= 2.05030,cos 64o= 0.4384 sine 64o= 0.8988)

10m

x

640

A. 4.3 m

 B. 6.4m

 C. 8.99m

D. 10.00m

 57 Two similar cardboards have areas of 24cm2 and 150cm2. If the length of the bigger one is 10cm, what is the length of the smaller one?

 A. 4 cm

 B. 6 cm

 C. 8cm

 D. 1.6cm

58. Calculate |DC|using the similar shapes given below

6 cm

12 cm

8 cm

Q

P

R

C

D

B

 A. 4cm

 B. 6 cm

 C. 8cm

 D. 9cm

59. Find |RS| in the figure below

6 cm

4 cm

8 cm

E

R

F

G

S

 A. 4$\frac{4}{5}$cm

B. 6cm

 C. 7$\frac{1}{2}$ cm

 D. 10cm

60. A ladder 15cm long rests against a vertical wall. If the foot of the ladder is 12m away from the wall, how far up the wall is the ladder?

 A. 12cm

 B. 9m

 C. 3m

 D. 15m

**SECTION B**

**Answer any four questions {each question carries equal marks} all workings must be shown**

1a A ladder of length 6cm rest it foot on a horizontal ground and leans against a vertical wall. It makes angle 40o with the wall.find correct to one decimal place, the distance of the foot of the ladder from the wall.(sin 40= 0.6424, cos 40= 0.7660,tan 40 =0.8391)

b.The data below shows the number of children in each home in a community.

1 0 3 2 2 1 1 1

2 1 0 3 1 0 4 3

3 2 0 4 4 4 3 1

7 3 2 2 6 6 2 2

4 4 1 0 2 0 2 1

1. Prepare a frequency distribution table for the data.
2. Which of the homes had 5 children

2a Find the area of the figure below

6cm

8cm

12cm

b. The table below represents the values of the equation:3x +y =7 for x = 0,1,2, ……4

complete the table.

c. Find the consecutive even numbers such that seven times the smaller number is subtracted from nine times the greater number makes 46.

3.A class of thirty students organised their own reality show in the school. Four students were producers, six were mimers, fifteen were choreographers and five made the costumes for the reality show. Represent this information on a pie chart.

4. Find the value of x in $34\_{x}=10011\_{2}$

 b) Solve the equation $\frac{2(2x+1)}{3}$ = $\frac{x-3 }{2}$

 c) The sum of three consecutive whole numbers is 108. Find the numbers.

5. Calculate the perimeter of a triangle below

(3x + 15) cm

(7x + 3) cm

(5x + 9) cm

 b) If angle A is equal to angle C in the figure below, find |DE|

B

C

3 cm

4 cm

D

E

7 cm

5 cm

A

6. In the diagram below, the curved part is a semi-circle. Find the area of the shaded portion and correct your answer to 3 significant figures

3 cm

3 cm

13 cm

8 cm