

RED SWASTIKA SCHOOL

S12

RED SWASTIKA SCHOOL

2004 PRELIMINARY EXAMINATION

MATHEMATICS

Name : _____ ()

Class : Primary 6 / _ (EM 1 / 2)

Date : 24 August 2004

BOOKLET A

15 Questions

25 Marks

Duration of Paper : 2 hours 15 minutes

Note:

1. Do not open this Booklet until you are told to do so.
2. Questions 1 - 15 are to be done on the OAS provided.
3. Read carefully the instructions given at the beginning of each part of the Booklet.
4. Do not waste time. If a question is difficult for you, go on to the next one.
5. Check your answers thoroughly and make sure you attempt every question.

Questions 1 to 5 carry 1 mark each. Questions 6 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet.

(25 marks)

1. Express $\frac{9}{15}$ as a decimal.

- (1) 0.06
- (2) 0.60
- (3) 6.00
- (4) 9.00

2. The value of $15 + 5 \times 3 \div 1 + 4$ is _____.

- (1) 18
- (2) 34
- (3) 64
- (4) 140

3. Peter has two \$5-notes and a \$1-note. How many 50-cent coins can he exchange them for?

- (1) 10
- (2) 2
- (3) 12
- (4) 22

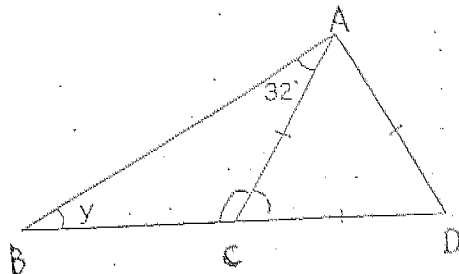
4. A carpenter has a rectangular block of wood measuring 25cm by 15cm by 8cm. What is the maximum number of 2-cm cubes that he can cut from it?

- (1) 336
- (2) 750
- (3) 1500
- (4) 3000

5. Mr Tan bought 3 durians weighing $1\frac{1}{5}$ kg, 1.5kg and $2\frac{2}{5}$ kg. What is the average weight of the durians?

- (1) 1.5 kg
- (2) 1.6 kg
- (3) 1.7 kg
- (4) 1.8 kg

6. In the diagram below, not drawn to scale, ACD is an equilateral triangle and BCD is a straight line. Find $\angle y$.



- (1) 28°
- (2) 60°
- (3) 88°
- (4) 92°

7. A windmill turns 1500 rounds in an hour. How many rounds can it turn in 5 minutes?

- (1) 25
- (2) 50
- (3) 125
- (4) 7500

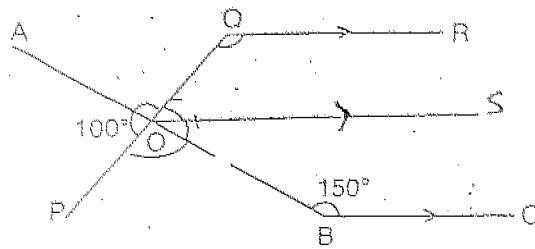
8. Meiling is y years old this year. Her brother is twice as old as her. How old was her brother 2 years ago?

- (1) $2y$ years old
- (2) $(2y - 2)$ years old
- (3) $(2y - 4)$ years old
- (4) $(y - 2)$ years old

9. The distance between the first lamp-post and the fifth lamp-post is 20m. If the lamp-posts are spaced out equally, what is the distance between the first and the third lamp-post?

- (1) 4 m
- (2) 10 m
- (3) 12 m
- (4) 15 m

10. In the figure below, not drawn to scale, AOB and POQ are straight lines, $QR \parallel OS$ and $OS \parallel BC$. Find $\angle OQR$.



- (1) 30°
- (2) 70°
- (3) 100°
- (4) 110°

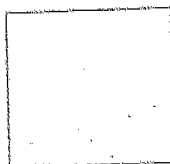
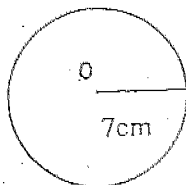
11. In a class of 40 pupils, 20% of them are girls. 25% of the boys like apples. If 12 pupils in the class like apples, what percentage of the girls in the class do not like apples?

- (1) 30%
- (2) 45%
- (3) 50%
- (4) 75%

12. The length of a rope was recorded as 4.5m, when rounded off to 1 decimal place. If the actual length was longer than 4.5m, what would be the longest possible length of the rope?

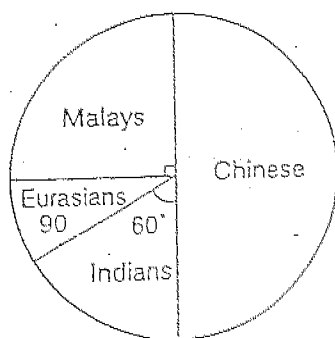
- (1) 4.49 m
- (2) 4.51 m
- (3) 4.54 m
- (4) 4.55 m

13. In the figures below, O is the centre of the circle and the circumference of the circle is the same as the perimeter of the square. What is the area of the square? (Take $\pi = \frac{22}{7}$)



- (1) 22 cm^2
- (2) 44 cm^2
- (3) 121 cm^2
- (4) 154 cm^2

The pie chart below shows the proportion of the different ethnic groups in a block of HDB flat in Bedok North. Study it carefully and use it to answer questions 14 and 15.



14. How many Malays are there in the block of flat?

- (1) 25
- (2) 90
- (3) 180
- (4) 270

15. What is the total number of people living in the block of flat?

- (1) 270
- (2) 540
- (3) 810
- (4) 1080

Questions 16 to 35 carry 1 mark each. Write your answers in the spaces provided. Give your answers in the units stated.

(20 marks)

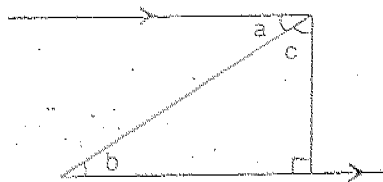
16. Express 375g as a fraction of 3 kg in its simplest form.

Ans : _____

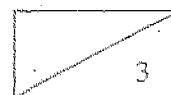
17. A rectangular tank measuring 20cm by 15cm by 10cm was $\frac{2}{3}$ filled with water. Find the volume of water in the tank in litres. (1 litre = 1 000cm³)

Ans : _____ l

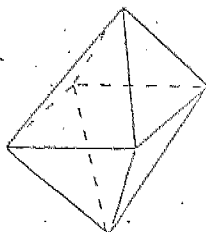
18. The figure below is not drawn to scale. If $AB \parallel CD$ and $BD \perp DE$, find the value of $\angle a + \angle c$.



Ans : _____ °



19. How many faces does the solid below have?



Ans : _____ faces

20. Ahmad took $\frac{3}{5}$ h to drive from home to work. If he drove at a speed of 75 km/h, what was the distance between his home and the office?

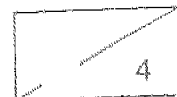
Ans : _____ km

21. On a bus to Orchard Road, there were 10 passengers. 4 of the passengers were male. Find the ratio of the number of female passengers to the total number of passengers. (Give your answer in its simplest form)

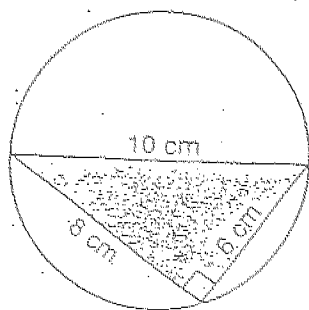
Ans : _____

22. If $\frac{3}{7}$ of a number is 21, what is the number?

Ans : _____



23. The figure below, not drawn to scale, shows a circle with diameter 10 cm and a triangle enclosed in the circle. Find the area of the shaded part.



Ans : _____ cm^2

24. Find the value of $3a^2 - 2a$ if $a = 4$.

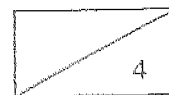
Ans : _____

25. The ratio of the number of blue beads to the number of red beads in a basket is 5 : 3. What percentage of the beads in the basket are blue beads?

Ans : _____ %

26. Siti cycles at a speed of 30 km/h for the first 30 minutes of the distance and at 20 km/h for the next $\frac{1}{4}$ h. What is her overall average speed?

Ans : _____ km/h



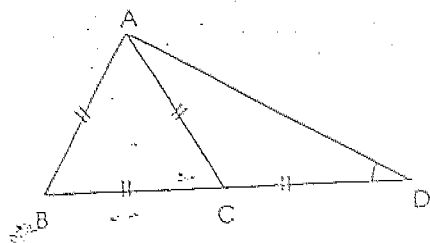
27. The volume of a cube is 343 cm^3 . What is its total surface area?

Ans : _____ cm^2

28. $\frac{1}{4}$ of Lili's stamps is equal to $\frac{2}{5}$ of Samy's 40 stamps. How many stamps does Lili have?

Ans : _____

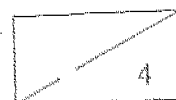
29. In the figure below, ABC is an equilateral triangle and $AC = CD$. Find $\angle CDA$.



Ans : _____ $^\circ$

30. Mrs Lim bought p m of cloth. She used 6 m of it to make curtains. She then cut up the remaining cloth into two equal pieces. What was the length of each piece?

Ans : _____ m



31. Jasmine bought a skirt and a blouse. The price of the skirt was 10% more than the price of the blouse. If she paid \$52.50 for the two items, what was the cost of the skirt?

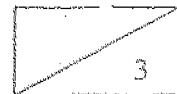
Ans : \$ _____

32. A container measuring 15 cm by 12 cm by 21 cm contains 2.75ℓ of water in it. How much more water must be added to make it $\frac{5}{6}$ full? (1ℓ = 1000cm³)

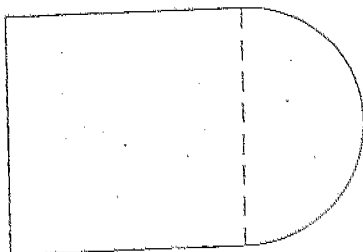
Ans : _____ ℓ

33. Find the value of $\frac{7}{9} \div 20$. (Round off your answer to 3 decimal places)

Ans : _____

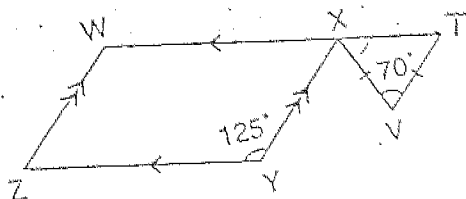


34. The figure below, is made up of a square and a semi-circle with radius of 35cm. Find the perimeter of the figure. (Take $\pi = \frac{22}{7}$)

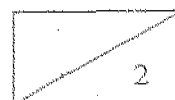


Ans : _____ cm

35. In the figure below, WXYZ is a parallelogram and TVX is an isosceles triangle. Find $\angle VXY$.



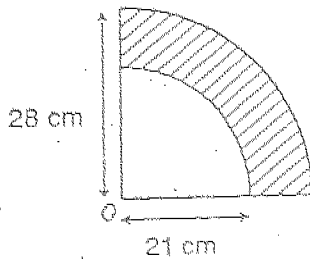
Ans : _____ °



For Questions 36 to 50, show your working clearly in the space below each question and write your answers in the spaces provided.
 The number of marks available is shown in brackets [] at the end of each question or part-question.

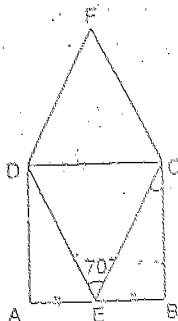
(55 marks)

36. The figure shown below is made up of 2 quarter circles and O is the centre of the 2 quarter circles. Find the area of the shaded part. (Take $\pi = \frac{22}{7}$)



Ans: _____ [2]

37. The figure below is not drawn to scale. ABCD is a square and CFDE is a rhombus. Find $\angle BCE$.



Ans: _____ [2]

38. Alice, Bernice and Cheryl shared a packet of sweets among themselves in the ratio 1 : 3 : 8. If Bernice's share was 100 sweets more than Alice's share, how many more sweets did Cheryl get than Bernice?

Ans: _____ [2]

39. John read $\frac{2}{5}$ of the pages of a book on Monday, $\frac{1}{3}$ of the remainder on Tuesday and $\frac{1}{4}$ of what remained on Wednesday. He read the final 90 pages on Thursday. How many pages were there in the book?

Ans: _____ [3]

40. A train travelled from Town X to Town Y which was 300 km apart in 6 h. After stopping at Town Y for 30 minutes, it then proceeded back to Town X. On the return journey, the speed of the train was 5 km/h less. If the train started from Town X at 8.00 am, at what time will it reach Town X again?

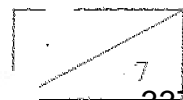
Ans: _____ [3]

41. Tom, Simon and Paul shared 360 bottle caps among themselves. The number of bottle caps that Simon had was $\frac{4}{6}$ of what Tom had. If Tom gave $\frac{1}{3}$ of his bottle caps to Paul, the three boys would then have the same number of bottle caps. How many bottle caps did Paul have at first?

Ans: _____ [3]

42. A rectangular tank, measuring 3 m by 2 m by 1.25 m is 60% filled with water. How many metal cubes of side 6 cm can be put into the tank before the water overflows?

Ans: _____ [4]

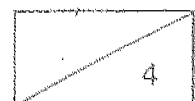


43. At 9.00am, Mr Lim's car passed a certain point X, travelling at an average speed of 60 km/h. At 10.30am, Mr Chua's car started off from point X at an average speed of 80 km/h in pursuit of Mr Lim's car.

- (a) At what time did Mr Chua's car overtake Mr Lim's car?
- (b) How far was Mr Chua's car from point X when it overtook Mr Lim's car?

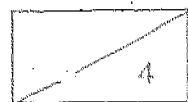
Ans: (a) _____ [2]

(b) _____ [2]

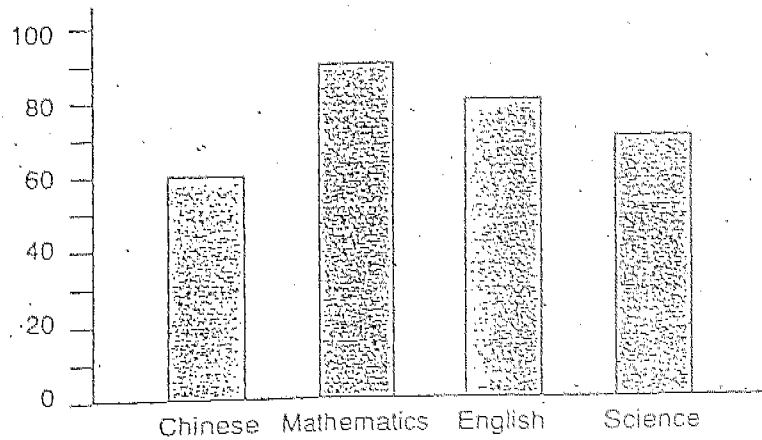


44. A fruit seller bought 3 boxes of 24 mangoes at \$12 per box. He sold $\frac{3}{4}$ of the mangoes at 3 for \$2 and $\frac{1}{3}$ of the remainder at 50¢ each. What was his profit on the mangoes sold?

Ans: _____ [4]



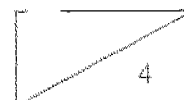
45. The bar chart below shows the marks scored by a student in an examination. Study it carefully and answer the questions that follow.



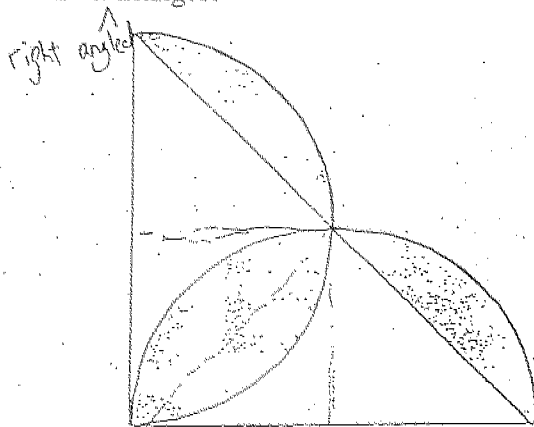
- (a) What was his average score for his best 3 subjects?
(b) What percentage of his total score was the English score?

Ans: (a) _____ [2]

(b) _____ [2]

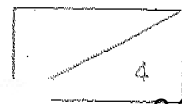


46. The figure below, not drawn to scale, shows two identical semi-circles of radius 20 cm and a triangle.

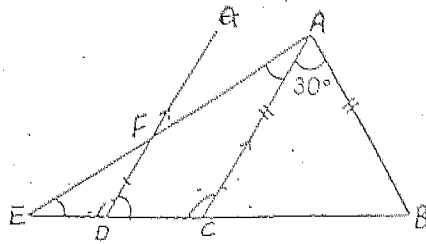


Find the area of the shaded part. (Take $\pi = 3.14$)

Ans: _____ [4]



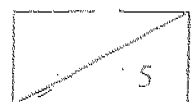
47. The figure below is not drawn to scale. $AB = AC$, $ED = DF$ and $DG \parallel CA$. EB and EA are straight lines.



- (a) Find $\angle AED$.
 (b) Find $\angle EAC$.

Ans: (a) _____ [3]

(b) _____ [2]



48. Mr Wong works as a salesman who is paid a basic salary of \$846 per month. In addition, he receives a commission of 2% on monthly sales over \$100 000.

(a) Calculate his total earnings in the month of January when his sales totalled \$165 000.

(b) Calculate his sales in the month of February when his total earning amounted to \$2 456.

Ans: (a) _____ [2]

(b) _____ [3]

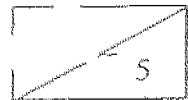
49. The cost of a shelf and a mirror was \$226. Selena bought 4 shelves, 2 mirrors and a chair for \$916. The cost of a chair and a shelf was \$292.

(a) How much did Selena pay for the mirrors?

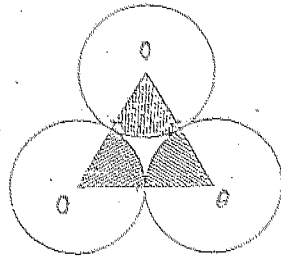
(b) If she paid for a shelf, a mirror and a chair with a \$1 000 note, how much change would she receive?

Ans: (a) _____ [3]

(b) _____ [2]



50. The figure below, not drawn to scale, is made up of an equilateral triangle and 3 similar circles and O is the centre of the 3 circles. The area of each circle is 78.5 cm^2 .

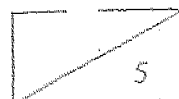


- (a) What is the radius of each circle?
- (b) What percentage of the 3 circles is shaded?
(Take $\pi = 3.14$)

Ans: (a) _____ [2]

(b) _____ [3]

- END OF PAPER -



RED SWASTIKA SCHOOL
2004 PRELIMINARY EXAMINATIONS
MATHEMATICS
PRIMARY 6

Q12

- | | | |
|--------------|---------------------------|-----------------------|
| 1) 2 | 27) 294 | 49) a) \$ 54 |
| 2) 2 | 28) 64 stamps | b) \$ 654 |
| 3) 4 | 29) 30 | 50) a) 5 cm |
| 4) 1 | 30) $(\frac{P - 6}{2})$ | b) 16 $\frac{2}{3}\%$ |
| 5) 3 | | |
| 6) 1 | 31) 27.50 | |
| 7) 3 | 32) 0.4 | |
| 8) 2 | 33) 0.0389 | |
| 9) 2 | 34) 320 | |
| 10) 2 | 35) 70° | |
| 11) 3 | 36) 269.5 cm ² | |
| 12) 3 | 37) 35° | |
| 13) 3 | 38) 250 sweets | |
| 14) 4 | 39) 300 pages | |
| 15) 4 | 40) 9.10 p.m. | |
| 16) 1/8 | 41) 60 bottle caps | |
| 17) 2 litres | 42) 13 cubes | |
| 18) 90 | 43) a) 3.00 p.m. | |
| 19) 8 | b) 440 km | |
| 20) 45 | 44) \$ 1 | |
| 21) 3 : 5 | 45) a) 80 marks | |
| 22) 49 | b) 26 $\frac{2}{3}\%$ | |
| 23) 24 | 46) 456 cm ² | |
| 24) 40 | 47) a) 37.5° | |
| 25) 62.5 | b) 37.5° | |
| 26) 20 | 48) \$ 2146 | |