

12 416

13 16

14 16

15 56

Section 2 : Section B Integers - 10 Questions

16 969

17 62

18 72

19 42

20 54

21 144

22 127

23 5460

24 11

25 405

TEST

AMO Grade4 Mock Test Paper 4

SOLUTIONS

SECTIONS

1. Section A MCQs - 15 Questions
2. Section B Integers - 10 Questions

Section 1 : Section A MCQs - 15 Questions

1

$$\text{Shirt} = \text{Tie} + 60$$

$$\text{Shirt} + \text{Tie} = 300$$

$$\text{Tie} = (300 - 60) \div 2 = 240 \div 2 = 120$$

2

$$\begin{aligned} & 561 + 562 + 563 + \dots + 569 \\ &= (500 \times 9) + (60 \times 9) + (1 + 2 + \dots + 9) \\ &= 4500 + 540 + 55 \\ &= 5095 \end{aligned}$$

3

$$10905 - 911 = 9994 \text{ people voted.}$$

$$\text{Male voters} = 2500 + \text{Female voters}$$

$$9994 - 2500 = 7494$$

$$7494 \div 2 = 3747 \text{ female voters}$$

4

Any number which is divisible by 11 and 5 must also be divisible by 55.

$$999 \div 55 = 18R9$$

Thus, $55 \times 18 = 990$ is the largest three-digit number that is divisible by 5 and 11.

5

$$\text{Since } 3 \times EAT = 444$$

$$EAT = 444 \div 3 = 148$$

$$E \times A \times T = 1 \times 4 \times 8 = 32$$

6

Since the last 2-digit number 24 is divisible by 4, $83m24$ will be divisible by 4 irrespective of the value of m .

For $83m24$ to be divisible by 3, $8 + 3 + m + 2 + 4 = 17 + m$ must be divisible by 3.

The closest multiple of 3 is 18.

$$\text{Thus, } m = 18 - 17 = 1$$

7

The pattern is $+2, +4, +6, +8, +10, \dots$

Thus, the sequence is 15, 17, 21, 27, 35, 45, 57

$$A = 27 \text{ and } B = 57$$

$$A + B = 27 + 57 = 84$$

8

Consider pages 1 to 100, 5 appears in the following page numbers,

(5, 15, 25, ... 95) – 10 times in ones place

(50, 51, 52, ... 59) – 10 times in tens place

Total of $10 + 10 = 20$ times for pages 1 to 100

Similarly, on pages 101 to 200 and pages 201 to 300, 5 appears 20 times each.

On pages 301 to 350, 5 appears in 305, 315, 325, 335, 345, and 350 so a total of 6 times.

Thus, digit 5 appears $20 \times 3 + 6 = 66$ times in a book that has 350 pages.

9

$$5 \times 8 \times 15$$

$$= 5 \times 2 \times 2 \times 2 \times 5 \times 3$$

$$= 10 \times 2 \times 10 \times 3$$

$$= 600$$

So, the sum of digits is $6 + 0 + 0 = 6$.

10

3 fruit vendors make 3 fruit baskets in 3 minutes so 1 fruit vendor makes 1 fruit basket in 3 minutes.

$$15 \div 3 = 5$$

That means 1 fruit vendor can make 5 fruit baskets in 15 minutes.

$$10 \times 5 = 50$$

Therefore, 10 fruit vendors can make 50 baskets in 15 minutes.

11

$\frac{2}{5} + \frac{3}{7} = \frac{29}{35}$, meaning that 29 units of exercises were completed and 6 units of exercises were uncompleted. Hence

$$6 \text{ units} = 12 \text{ exercises}$$

$$1 \text{ unit} = 2 \text{ exercises}$$

$$35 \text{ units} = 70 \text{ exercises}$$

12

$$4 + 2 + 5 = 11$$

$$2 + 5 = 1 + 6 = 7$$

The last two-digit number 25 can be reduced to 16 while leaving the hundreds digit as 4.

Thus, 416 is the greatest number smaller than 425 and its digits add up to 11.

13

Solving layer by layer moving upwards,

The lowest (or 5th) layer will have 1, 1, 1, 1, 1

The second layer will have 2, 2, 2, 2

The third layer will have 4, 4, 4

The fourth layer will have 8, 8

The topmost layer will have 16

14

1-part triangle – 6

2-part triangle – 3

3-part triangle – 6

6-part triangle– 1

Total = $6 + 3 + 6 + 1 = 16$

15

Since three-sevenths are balls, the remaining four-sevenths must be bats.

Since there are 32 bats, the total number of bats and balls = $32 \div 4 \times 7 = 56$.

Section 2 : Section B Integers - 10 Questions

16

$$999 \div 19 = 52R11$$

Greatest 3-digit multiples of 19: $999 - 11 = 988, 969, 950, \dots$

A number is divisible by 3 if the sum of its digits is divisible by 3.

$9 + 8 + 8 = 25$ is not divisible by 3 but $9 + 6 + 9 = 24$ is divisible by 3.

Thus, 969 is the greatest 3-digit multiple of 19 that is divisible by 3.

17

Factors of 5 are 1 and 5.

Pages with 1 in ones place = 1, 11, 21, 31, ..., 91

Pages with 1 in tens place = 10, 11, 12, ..., 19

Pages with 5 in ones place = 5, 15, 25, ..., 95

Pages with 5 in tens place = 50, 51, 52, ..., 59

11 and 55 are repeated twice.

Number of pages that are torn = $10 + 10 + 10 + 10 - 1 - 1 = 38$

Number of pages left = $100 - 38 = 62$

18

The second column adds up to 15 which gives us the third number in the second column as 2.

The only solution for the first row to add up to 16 is when $A = 9$ and another number is 1 since no numbers can be repeated.

A=9	6	1
3	7	5
4	2	B=8

$A \times B = 9 \times 8 = 72$

19

$$3500 \div 85 = 41R15$$

So, 42 batches need to be ordered because if only 41 batches were ordered, there will be a shortage of 15 chairs.

20

Two-thirds of the students present are boys.

So, since one-third of students present are girls and there are 15 girls present,

$$15 \times 3 = 45 \text{ students were present on Monday.}$$

As 45 is five-sixth of the total number of students.

$$\text{Total number of students} = 45 \div 5 \times 6 = 54$$

21

The lowest common multiple of 4 and 6 is 12.

So, in 12 hours, Paul can fill the pit 3 times while Renny can fill the same pit 2 times.

So, if they are working together, they can fill the pit 5 times in 12 hours or
 $12 \times 60 = 720$ minutes.

Thus, they can fill the pit once in $12 \times 60 \div 5 = 144$ minutes.

22

A number is divisible by 9 when the sum of digits is divisible by 9.

The smallest five-digit number beginning with 8 will have the first four digits as 8012.

$$8 + 0 + 1 + 2 = 11$$

The smallest number divisible by 9 greater than 11 is 18.

So, the last digit must be $18 - 11 = 7$.

The five-digit number is 80127 and the last 4 digits are 0127.

23

Since the number is even and it is a multiple of 13 and 35, it must be divisible by the lowest common multiple of 2, 13 and 35 which is 910.

Multiples of 910	910	1820	2730	3640	4550	5460
Sum of digits	10	11	12	13	14	15

The number is 5460 to fulfil all the conditions as shown.

24

There are $12 - 1 = 11$ intervals of 4 hours between the 1st alarm and the 12th alarm.

$11 \times 4 = 44$ hours have lapsed when the 12th alarm rang.

$$44 \div 12 = 3R8$$

The hour hand has rotated 3 whole turns and 8 hours when the 12th alarm rang at 7 o'clock.

Working backwards, as 8 hours before 7 o'clock was 11 o'clock, the first alarm rang when the hour hand was on 11.

25