4
CHAPTER

MISCELLANEOUS

EXERCISE

YEAR : 2004

1. Out of 450 students of a school 325 play football,175 play cricket and 50 play neither football nor cricket, How many students play both football and cricket?

(a) 50 (b) 100

(c) 75 (d) 225

2. A wall- clock takes 9 seconds in trings 9 times at 9 O'clock. The time, it will take in trings 11 times at 11 O'clock, is

(a) 10 seconds

(b) 11 seconds

(c) 11.25 seconds

(d) 12.38 seconds

YEAR : 2007

3. The total number of integers between 200 and 400. Each of which either begins with 3 or ends with 3 or both is

(a) 10 (b) 100

(c) 110 (d) 120

YEAR : 2012

4. For a certain month, the dates of three of the Sundays are even numbers. Then on what day on 15th of that month.

(a) Thursday (b) Friday

(c) Saturday (d) Sunday

5. A wall clock gains 2 minutes in 12 hours, while a table clock loses 2 minutes every 36 hours. Both are set right at 12 noon on Tusesday. After how many time both will show same time.

(a) 12.30 at night, after 130 days

(b) 12 noon, after 135 days

(c) 1.30 at night, after 130 days

(d) 12 at night, after 135 days

6. From 9.00 AM to 2.00 PM, the temperature rose at a constant rate from 21° C to 36°C. What was the temperature at noon?

(a) 27° C (b) 30° C

(c) 32°C (d) 28.5°C

7. The length of a minute hand of a clock is 7cm. The area swept by the minute hand in 30 minutes is:

(a) 210 sq. cm (b) 154 sq. cm

(c) 77 sq. cm (d) 147 sq. cm

8. The minute hand of a big wall clock is 35 cm long. Taking $\pi = \frac{22}{7}$, then determine the length of arc by minute hand in 18 second.

(a) 11 cm (b) 1.1 cm

(c) 6.6 cm (d) 6 cm

9. If a clock strikes appropriate number of times at each hour, how many times will it strike a day?

(a) 300 (b) 156

(c) 68 (d) 78

10. If a machine consumes $\frac{k}{5}$ kilo-watts of power every t hours. How much power in kilo-watts, will consume by three such machines in 10 hours?

(a) $\frac{k}{t}$ (b) $\frac{6t}{k}$

(c) $\frac{6k}{t}$ (d) $\frac{t}{k}$

11. I walk a certain distance and ride back taking a total time of 37 minutes. I could walk both ways in 55 mintues. How long would it take me to ride both ways?

(a) 30 minutes (b) 19 minutes

(c) 37 minutes (d) 20 minutes

YEAR : 2014

12. If the number of items of a set A be $n(A) = 40$, $n(B) = 26$ and $n(A \cap B) = 16$, then $n(A \cup B)$ is equal to

(a) 30 (b) 40

(c) 50 (d) 60

13. If the Universal Set U = (1,2,3,4,5,6,7,8) and A =(1,2,3,4), then A^c is equal to

(a) (5,6,7,8) (b) (5,6,1,2)

(c) (5,6,2,3) (d) (5,6,3,4)

14. A piece of cloth measured with a metre stick, one cm short, is 100 metres long. Reckoning the metre sticks as being right, the actual length of the cloth (in cm) is

(a) 3,900 (b) 9,900

(c) 8,000 (d) 6,100

15. A man having height 169 cm is standing near a pole. He casts a shadow 130 cm long. What is the length of the pole, if it gives a shadow 420 cm long?

(a) 550 cm

(b) 589 cm

(c) 323 cm

(d) 546 cm

16. The angle formed by the hour hand and minute hand of a clock at 3 PM.

(a) $\pi / 4$

(b) $\pi / 3$

(c) $5\pi / 12$

(d) $\pi / 2$

(SSC CGL Pre Exam 2016)

17. Every Sunday, Gin jogs 3 miles. If he jogs 1 mile on monday and each day he jogs 1 mile more than the previous day. How many miles Gin jogs in 2 weeks?

(a) 42 (b) 63

(c) 48 (d) 98

(SSC CGL Pre Exam 2016)

ANSWER KEY

1. (b)	6. (b)	10. (c)	14. (b)
2. (d)	7. (c)	11. (b)	15. (d)
3. (c)	8. (b)	12. (c)	16. (d)
4. (c)	9. (b)	13. (a)	17. (c)
5. (b)			

EXPLANATION

1. (b) The number of student who play Cricket and football or both
= 450 – 50 = 400
$n(F \cup C) = n(F) + n(C) - n(F \cap C)$
$400 = 325 + 175 - n(F \cap C)$
$n(F \cap C) = 100$

2. (d) 9sec $\rightarrow$ 9 times trings

$1\text{sec} \rightarrow \frac{9}{9-1=(8)}$

Since first tringing in 0 second

$11\text{sec} \rightarrow \frac{9}{8} \times (11)$

$= \frac{99}{8} = 12.38$ sec.

3. (c) 203, 213, 223, 233, 243, 253, 263, 273, 283, 293
$\Rightarrow$ Total 10
300 to 399
$\Rightarrow$ Total no of integers = 100
Total no of integers
= 10 +100 = 110

4. (c) It is possible when there are 5 sundays in the month starting from 2 of that month. In that case of 3 even dates will be sunday on 2, 9, 16, 23, 30. So on 15th will be saturday

5. (b) A wall clock gains 2 min. in 12 hours
A wall clock gains 6 min. in 36 hours
A table clock loses 2 min. (in 36 hours)

		Total difference
(in 36 hours)	$\rightarrow$	8 min
$\downarrow \times 90$		$\downarrow \times 90$
36×90		12 hrs

(After 12 hours or 720 min)

Total days = $\frac{36 \times 90}{24} = 135$ days

So, both clock will show same time at 12: 00 Noon after 135 days

6. (b) Total increase
$= 36° - 21° = 15°$
Total time = 5 hrs
So it increase
= 3°C/hr
At 9:00 AM temperature is 21
So, at 12 : 00 PM temperatiure is
21+ (3×3) = 30°C

7. (c) In 60 min. minute hand covers = 360°
In 30 min minute hand covers = 180°
radius (Length of min. hand = 7 cm

Area = $\pi r^2 \frac{\theta}{360°}$

$= \frac{22}{7} \times 7 \times 7 \times \frac{180°}{360°} =$ **77 cm²**

8. (b) Radius (Length of minute hand = 35 cm
In 1 hr (3600 sec.) min. hand covers = $2\pi r$
In 1 second, minute hand covers = $\frac{2\pi r}{3600}$
In 18 seconds, length of arc of minute hand is

$= \frac{2\pi r}{3600} \times 18 = \frac{2 \times 22 \times 35}{7 \times 3600} \times 18$

= **1.1 cm**

9. (b) Total number of time it strike
= 2(1 + 2 + ...+12)

Sum of n natural no = $\frac{n(n+1)}{2}$

$= 2\left(\frac{12 \times (12+1)}{2}\right) = 156$

10. (c) In 't' hours a machine consume $\frac{K}{5}$ Watt

In 1 hours a machine consume $\frac{K}{5t}$

In 10 hours a machine consume $\frac{k}{5t} \times 10$

In 10 hours 3 machines consume $\frac{k}{5t} \times 10 \times 3 = \frac{6k}{t}$

11. (b) Time taken in walking both ways
= 55 minutes
Time taken in walking one ways = $\frac{55}{2} = 27.5$ min
Time taken walking and riding back = 37 min
Time taken in riding on one way = 37–27.5 = 9.5 minutes
Time taken in riding both ways = 9.5×2 = 19 min

12. (c) $n(A \cup B) = n(A) + n(B) - n(A \cap B)$
= 40+26–16 = 50

13. (a) U = (1,2,3,4,5,6,7,8)
A = (1,2,3,4)
$A^c = x \in \cup$ and $x \notin A$
$A^c = U - A$
= (1,2,3,4,5,6,7,8) – (1,2,3,4)
= (5,6,7,8)

14. (b) 1 metre's actual length is 99 cm
100 metres actual length is 100 × 99 = 9900 cm

15. (d) If the shadow is 130 cm the actual height is 169 cm
If the shadow is 1 cm the actual height is $\frac{169}{130}$
If the shadow is 420 cm the actual height is

$= \frac{169}{130} \times 420$

= 546 cm

16. (d) hour = 3
minute = 00

angle = $\left|30H - \frac{11}{2}M\right|$

$= \left|30 \times 3 - \frac{11}{2} \times 0\right|$

$\theta = 90$

$\theta = 90 \times \frac{\pi}{180} = \frac{\pi}{2}$

17. (c)

S	M	T	W	T	F	S
3	1	2	3	4	5	6

Jogs in one week = 24
Total Jogs in two week
= 24 × 2
= 48