

NTSE STAGE II (2015)

MAT

HINTS & SOLUTIONS

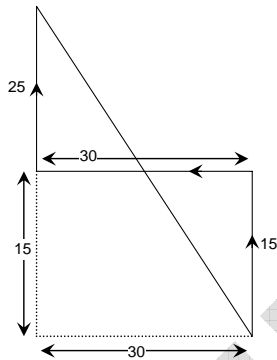
1. **3**
Sol. RESPOND (Reverse the given word)

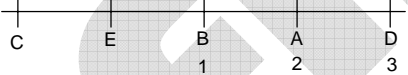
D N O P S E R
+1 -1 +1 -1 +1 -1 +1
E M P O T D S

Similarly

C L A R I F Y
→ Y F I R A L C
+1 -1 +1 -1 +1 -1 +1
Z E J Q B K D

2. **2**
Sol. Distance = $\sqrt{40^2 + 30^2} = 50\text{m}$



3. **4**
Sol. 
⇒ (Option 4) is correct option.

4. **3**
Sol. Administration – F, G
Accounts – A, C, B/E
Operations – B/E, H
Males – B, E, A, F
Females – G, C, H

5. **2**
Sol. Three people work in Accounts.

6. **2**
Sol. Required order: $G > H > A > F, B, E, > C$
A is 3rd in order.

7. **4**

Sol. 'B' works either in operations or in accounts.
Hence option '4'.

8. 4

Sol. From options, we can verify option '4' is answer.

(9 – 11) - In the first step, the word which comes first in the dictionary is placed at the first place and the remaining words are written in reverse order. In the second step, the word which comes second in the dictionary is placed at the second place and all words except the first and the second are written in a reverse order. The process continues in the same manner.

9. 1

Sol. Input: Four of the following five form a group.
Batch I : a group form five following the of four.
Batch II: a five four of the following form group.
Batch III: a five following group form the of four.
Batch IV: a five following form four of the group.
Batch V: a five following form four group the of

10. 3

Sol. Batch IV: back go here people who settle want to.
Batch V: back go here people settle to want who.

11. 2

Sol. Batch I. he so used to sell the surplus items.
Input: Except 'he' all the remaining words has to be written in reverse order.
Hence, 'he items surplus the sell to used so'.

12. 3

Sol. By observation

13. 3

Sol. Total number of cubes = 64
Painted cubes = 28
Unpainted cubes = $64 - 28 = 36$

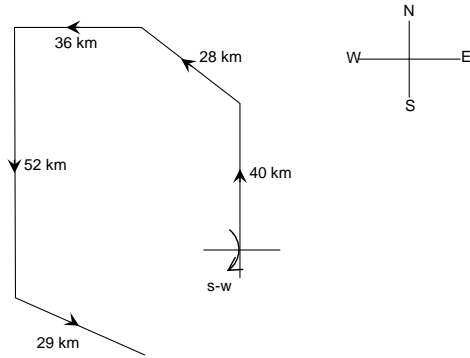
14. 3

Sol. $(5 + 4) - (3 + 2) = 9 - 5 = 4$
 $(3 + 6) - (4 + 2) = 9 - 6 = 3$
 $(9 + 2) - (2 + 2) = 11 - 4 = 7$
Similarly, $(2 + 8) - (3 + 3) = 10 - 6 = 4$

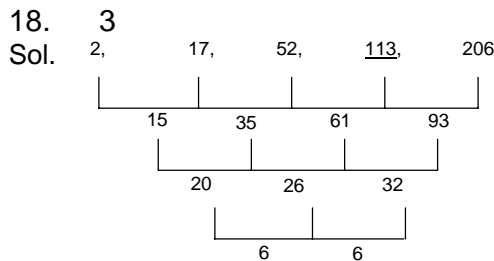
15. 1

Sol. po ki top ma → Usha is playing cards
kop ja ki ma → Asha is playing tennis
ki top sop ho → They are playing football
po sur kop → Card and tennis
ki → playing
ma → is
kop → tennis
ja → Asha

16. 1
Sol.



17. 1
Sol. 1 → A gives the best illustration.



19. 1
Sol. $11^2 - 9^2 = 40$
Similarly $15^2 - 7^2 = 176$
 $25^2 - 21^2 = 184$

20. 2
Sol.

21. 3
Sol. 111, 331, 482, 551, 263, 383, 362, 284
111 → $1 \times 1 = 1$ (Middle number)
331 → $3 \times 1 = 3$ (Middle Number)
482 → $4 \times 2 = 8$ (Middle Number)
In number 383 → $3 \times 3 = 9$ (Not middle term)

22. 2
Sol. $6^2 - (4 \times 4) - 1 = 19$. (19th alphabet = S)
 $4^2 - (1 \times 7) - 1 = 8$. (8th alphabet = H)
 $8^2 - (5 \times 10) - 1 = 13$. (13th alphabet = M)
 $5^2 - (2 \times 5) - 1 = 14$. (14th alphabet = N)

23. 1
Sol. c_bba_cab_ac_ab_ac
⇒ cab/bac/cab/bac/cab/bac

24. **3**

Sol. Average speed = $\frac{\text{Total Distance}}{\text{Total Time}}$

$$= \frac{2.5}{1 + \frac{1}{2} + \frac{1}{8}} \Rightarrow \frac{2.5}{1 + 0.5 + 0.125}$$
$$= \frac{2.5}{1.625}$$

25. **4**

Sol. $A - 0$ B - 0, C - 2, D - 2, E - 1 F - 2 G = ?

$$A \rightarrow \frac{26}{1} \text{ Remainder } 0$$

$$B \rightarrow \frac{26}{2} \text{ Remainder } 0$$

$$C \rightarrow \frac{26}{3} \text{ Remainder } 3$$

Similarly

G \rightarrow 26 divided by 7 Remainder 5

26. **2**

Sol. Amount with A = 250
Amount with C = 500
So, Amount with B = 250

27. **4**

Sol. Given,

$$5e + 7s + 9p = 100 \text{ Rs}$$

$$2e + 6s + 10p = 100 \text{ Rs}$$

With given data we cannot find the cost of $1e + 1s + 1p$. Hence option (4)

28. **4**

Sol. $\theta = \left| \frac{11}{2}m - 30h \right|$

$$90^\circ = \left| \frac{11}{2}m - 30(7) \right|$$

$$m = 54 \frac{6}{11} \quad (\text{or}) \quad 21 \frac{9}{11}$$

Hence 7hr 21m 49s and 7h 54m 33s.

29. **3**

Sol. Stimulant is related to activity in the same way as Fertilizer is related to growth.

30. **2**

Sol. $(6 \times 3) - (4 \times 2) = 10$
Similarly, $(9 \times 5) - (5 \times 3) = 30$
 $(6 \times 5) - (5 \times 2) = 20$

31. **2**

Sol. $\frac{7 \times 4 \times 3}{7} = 12$

Similarly, $\frac{3 \times 1 \times 4}{4} = 3$
 $\frac{2 \times 7 \times 5}{7} = 10$

32. **2**

Sol. $3 + 8 = 11$, and P is 11th letter from right end.
 $9 + 11 = 20$, and G is 20th letter from right end.
 Similarly, $7 + 18 = 25$, and B is 25th letter from right end.

33. **2**

Sol. By observation option (2)

34. **2**

Sol. By observation option (2)

35. **3**

Sol. 40 men – 10 days – $\frac{1}{4}$ of work
 35 men – 10 days – $\frac{7}{32}$ of work
 30 men – 10 days – $\frac{3}{16}$ of work
 25 men – 10 days – $\frac{5}{32}$ of work
 20 men – 10 days – $\frac{1}{8}$ of work
 15 men – 6.66 days – $\frac{1}{16}$ of work
 Total days = 56.66

36. **2**

Sol. By observation option (2) is the answer.
 The lines are increasing by one from one picture to another picture.

37. **4**

Sol. $\frac{D}{A}$ $\frac{B}{E}$ $\frac{F}{C}$
 So A and D; B and E; F and C

38. **2**

Sol. $(A + B)$ income $>$ $(C + P)$ income
 $(A + C)$ income $=$ $(B + D)$ income
 Let $(B + D)$ income $= x$ Rs
 Then, A income $= x/2$ Rs
 If A $\rightarrow x/2$ then C income is also $x/2$ as $(B + D)$ income is x
 A & C income are equal,
 then income of B is more than D.

39. **3**

Sol. $\begin{array}{ccccccc} & & -3 & & -3 & & -3 & & \\ & & | & & | & & | & & \\ A & 4 & X, & D & 9 & U, & G & 16 & R, & J & 25 & O \\ & & | & & | & & | & & | & & & \\ & & +3 & & +3 & & +3 & & & & & \end{array}$

40. **4**

Sol. From the information we get

- (1) Ramesh is in class VI
- (2) Ashish is in class V as he is good at all the subjects.

41. **4**

Sol. From the options, we can verify option (4) is the answer.

42. **3**

Sol. Let $(x + 5)$ hrs, (x) hrs, $(x - 4)$ hrs are the times taken by three pipes to fill the tank individually.

$$\text{Given, } \frac{1}{x+5} + \frac{1}{x} = \frac{1}{x-4}$$

$$\Rightarrow x = 10$$

So time taken by first pipe = $x + 5 = 10 + 5 = 15$ hrs

43. **3**

Sol. Given, F E E D = 47

$$\begin{aligned} \text{Now, } (F \times 1) + (E \times 2) + (E \times 3) + (D \times 4) \\ = 6 + 10 + 15 + 16 \\ = 47 \end{aligned}$$

$$\begin{aligned} \text{Similarly, M E E T} &= (M \times 1) + (E \times 2) + (E \times 3) + (T \times 4) \\ &= 13 + 10 + 15 + 80 \\ &= 118 \end{aligned}$$

44. **2**

Sol. Tuesday – 1 pm – 1 min slow

Friday – 1 am – 2 min fast.

So, in total 60 hrs the watch gained 3 min. It will show correct time when it gains 1 min. So to gain 1 min it will take 20 hrs. Hence, it will show correct time on Wednesday at 9 am.

45. **3**

Sol.

E	T	R	U	N	I	P	S	M	
#	@	*	+	\$	%	?	&	=	

M I N T \Rightarrow (option 3 is correct)

46. **2**

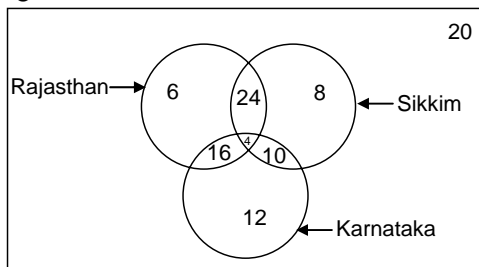
Sol. R I N S E \Rightarrow (option 2 is correct)

47. **4**

Sol. I N T E R E S T \Rightarrow (option 4 is correct)

48. **3**

Sol.



Atleast two states = $24 + 4 + 16 + 10 = 54$.

49. 2

Sol. Only two states = $24 + 10 + 16 = 50$

50. 1

Sol.

B R E A K T H R O U G H
└─┘ └─┘ └─┘ └─┘ └─┘ └─┘
4 1 6 3 2 5

1 2 3 4 5 6 = EA OU HR BR GH KT

D I S T R I B U T I O N
└─┘ └─┘ └─┘ └─┘ └─┘ └─┘
4 1 6 3 2 5

1 2 3 4 5 6 = ST TI BU DI ON RI

FITJEE