NTSE STAGE II
CODE: 13 – 15
MAT

1. Complete the series:
D3Y104, G9U91, J27Q78, M81M65
(1) P243I39 (2) Q243I52
(3) P243I52 (4) Q162J39

2. Which of the following can replace the question mark?

0.8	0.512
0.04	?

(1) 0.0064 (2) 0.0016
(3) 0.000064 (4) 0.000016

Directions (Questions 3 – 5): There are eight people A, B, C, D, E, F, G and H sitting around a circular table facing centre. B is sitting second to the left of G who is sitting third to the right of F. Only E is sitting between A and C. C is sitting third to the left of B. Only one person is sitting between E and H.

3. Which of the following is correct?
(1) D is sitting third to the left of H (2) F is sitting third to the left of G
(3) C is sitting third to the left of D (4) H is sitting second to the right of C

4. Based on the given information, which of the following is the correct position?
(1) A and C are sitting next to each other (2) F and G are sitting next to each other
(3) H and F are sitting next to each other (4) D is sitting next to H

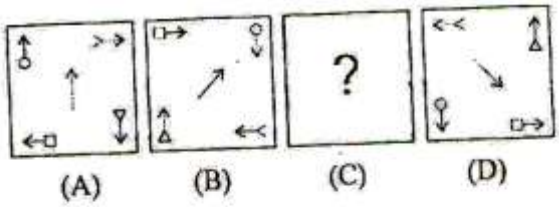
5. Which of the following is the correct order of sitting of persons right of A?
(1)ECHDGBF (2)ECHFBDG
(3)EBHDCFG (4) CHBEDGF

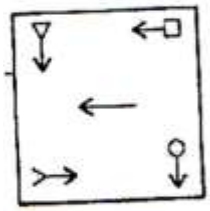
6. Amita is standing at Point A facing north direction. She walks for 5 kilometers in the north east direction. Then she turns at an angle of 90^o at her right and once again travels the same distance. She reaches at Point B. Now she takes a turn at 90^o to her left and walks for 3 kilometers and once again takes right turn at 90^o and travels 3 kilometers and reaches at Point C. What is the direction of Point B and C respectively with respect to Point A?
(1) East, East (2) East, North east
(3) North east, East (4) North east, North east

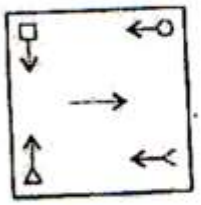
7. In the question given below, there are three statements followed by three conclusions numbers I, II and III. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions, and then decide which of the given conclusions (s) logically follows from the given statements disregarding commonly known facts.
Statements: All teachers are professors.
No professor is male.
Some males are designers.

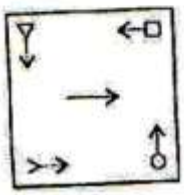
II. Some designers are professors.
III. No male is teacher.
(1) Only III follows (2) Both I and II follows
(3) Either I or II follows (4) Either I and III follows; or II and III follows

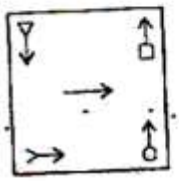
8. In the following question, there are four figures A, B, C and D called problem figures. A and B are related in the same way as C and D are related. Which figure out of four given options will come in place of figure C?



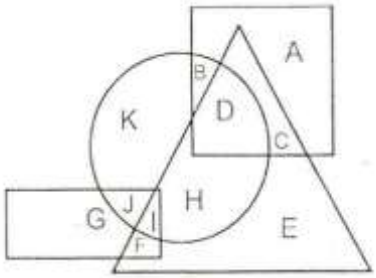
(1) 

(2) 

(3) 

(4) 

9. In the following figures, square represents professors, circle represents males, triangle represents cricketers and rectangle represents trainers.



On the basis of information given in the above diagram, which of the following is correct?
(1) C represents male professors who are cricketers too
(2) I represents male trainers who play cricket
(3) B represents male professors who are trainers
(4) F represents male trainers who are not cricketers

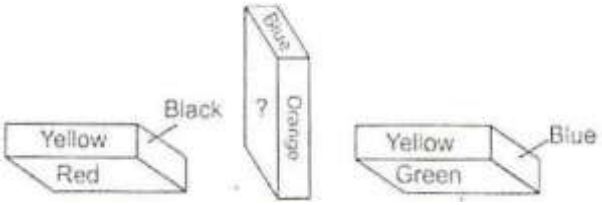
Directions (Questions 10 – 12) : Five periods of Hindi, English, Science, Mathematics and Sanskrit are to be taken by five different teachers A, B, C, D and E in five different periods 1, 2, 3, 4 and 5. Each teacher will teach only one subject and takes only one period.
Science is not the 3rd period. 5th period is taken by D who does not teach Hindi or Sanskrit. A takes 3rd period. The one who teacher Sanskrit takes 4 th period. There are two periods after and two periods before Mathematics period. Hindi period is between Science and Mathematics period. B teaches Science. E takes period just before D's period.
After reading the above information, answer the following questions.

10. Who teaches Hindi and in which period?
(1) C teaches Hindi in 2nd period
(2) E teaches Hindi in 1st period
(3) C teaches Hindi in 4th period
(4) Data is inadequate

11. Which of the following is the correct sequence of subject period teacher?
(1) Mathematics – 3 – D
(2) Sanskrit – 4 – E
(3) Mathematics – 2 – A
(4) Hindi – 2 – E

12. The subject taught by teachers A, B, C, D and E respectively are
(1) Mathematics, Science, Hindi, Sanskrit, English
(2) Mathematics, Science, English, Hindi, Sanskrit
(3) Mathematics, Hindi, English, Sanskrit, Science
(4) Mathematics, Science, Hindi, English, Sanskrit

13. A couboid is painted in 6 colours, i.e., red, green, blue, yellow, orange and black, one colour on each side. Three position are shown below:



What is the colour of the side having question mark?
(1) Red (2) Yellow
(3) Green (4) Blue

14. If x stands for +, ÷ stands for –, + stands for ÷ and – stands for x, then what is the value of following expression?
÷ 33 x 11 ÷ 9 x 28 + 4 – 5
(1) 16 (2) 8
(3) 4 (4) 2

15. If REASON is coded as PGYUMP, then DIRECT will be coded as?
(1) BKPGAV (2) FKTGEV
(3) FGTCER (4) BGPCAR

16. Read the information carefully and answer the following question.
A family has husband, wife and three children A, B and C. The present age of husband is 5 years more than the wife's present age. Wife's present age is twice the present age of A. The present age of A is 12 years more than the present age of B. B's present age is $12\frac{1}{2}$ times the present age of C. If C is 12 years old at present. What is the present age of husband's friend Ram who is 15 years younger than husband (him)?
(1) 30 years (2) 50 years
(3) 60 years (4) 80 years

Directions (Questions 17 -18): Pritam, Zeba, Joy and Anu were assigned duties in the English language alphabetical order of their names. Only one of them is assigned a duty on a day. This assignment is repeated in the same sequence. Working week starts from Monday and ends on Friday. Answer the following:

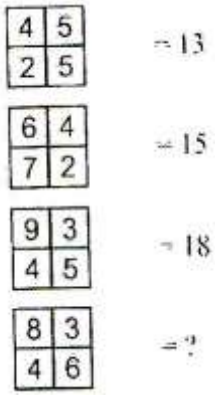
17. Who worked for least number of days and for how many days if the duties assigned for 3 weeks?
(1) Anu, 3 days (2) Anu, 4 days
(3) Zeba, 3 days (4) Zeba, 4 days

18. Who were assigned duties on Wednesday in 1^{st}, 2^{nd} and 3^{rd} weeks respectively?
(1) Pritam, Zeba, Anu (2) Pritam, Anu, Zeba
(3) Pritam, Joy, Anu (4) Joy, Zeba, Anu

19. In a showroom, 60 percent discount is given to everybody on all the articles. The successive discount of 40 percent is offered to female students. If printed price of an article of Rs 1000/- is bought by a female student, how much she will have to pay for that article?
(1) Inconclusive (2) Zero

(3) Rs 160/- (4) Rs 240/-

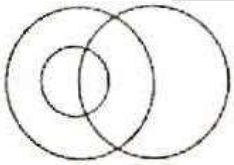
20. From among the four alternatives given below, which number replaces the question mark?

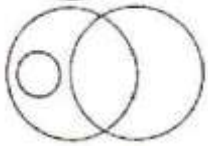


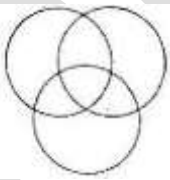
(1) 11 (2) 14
(3) 16 (4) 17

21. Which of the following diagrams indicates the best relation among men, fathers and teachers?

(1) 

(2) 

(3) 

(4) 

22. Guitar : Music : : Book : ?
(1) Pages (2) Writer
(3) Publisher (4) Knowledge

23. Reena, Rita and Zoha are three friends. Reena is the eldest followed by Rita and Zoha. Reena is 2 years elder to Rita and 5 years elder to Zoha. The sum of the present age of Reena and Zoha is 3 times the age of Rita 5 years ago. What is the current age of Rita?
(1) 12 years (2) 14 years
(3) 16 years (4) 18 years

Directions (Questions 24 – 26): Lata was cutting a cuboid shaped cake at her birthday party which has 12 inches length, 8 inches breadth and 2 inches height.
Two faces measuring 8 inches x 2 inches are coated with chocolate cream.
Two faces measuring 12 inches x 2 inches are coated with vanilla cream.
Two faces measuring 12 inches x 8 inches are coated with butter scotch cream.
The cake is cut into 24 cubes of size, 2 inches each side.

24. How many cake pieces are there which have only two types of coatings of cream (any two out of chocolate, vanilla and butter scotch)?
(1) 4 (2) 8
(3) 12 (4) 16

25. How many cake pieces will have only one type of coating of cream?
(1) 4 (2) 8
(3) 12 (4) 20

26. Kasim, Rajni, Pema and Gurpreet loved the chocolate cream and they decided to take all pieces with chocolate coating for them. How many cake pieces will be available for others?

(1) 8 (2) 12
(3) 16 (4) 20

27. During her morning walk in the park, Tanya saw Monica coming from the opposite direction. They greeted each other and had a face to face chatting. If Monica's shadow was to the right of Tanya, then which direction was Monica facing?

(1) North (2) East
(3) West (4) South

28. Given below is a question and two statements I and II. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both statements carefully and give the answer.
Question: A, B, C, D and E are sitting in a row, not in that order. A is sitting next to E. Is E sitting between A and C?
Statements:

(1) I alone is sufficient (2) II alone is sufficient
(3) Both I and II together (4) Both I and II together are not sufficient

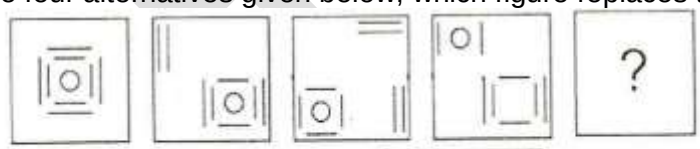
29. A person needs to find the fastest two horses from 16 horses. Only a race of 4 horses can be conducted at a time. What is the minimum number of races to be conducted to determine the fastest two? Assume that horses will not get tired at all, and time cannot be measured.

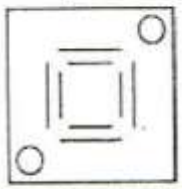
(1) 6 (2) 7
(3) 8 (4) 15

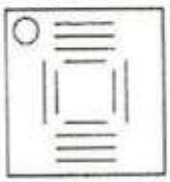
30. Which letter replaces the question mark?
b c e g k ? q s

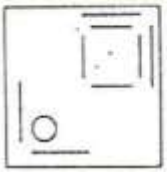
(1) i (2) m
(3) n (4) o

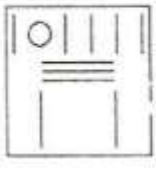
31. From among the four alternatives given below, which figure replaces the question mark?



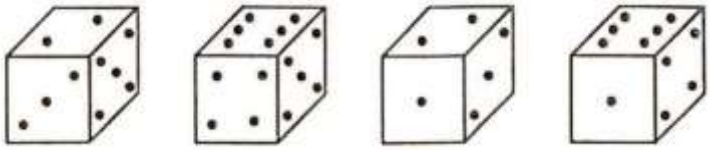
(1) 

(2) 

(3) 

(4) 

32. How many points will be on the face opposite to the face which contains 2 points?



(1) 1 (2) 5
(3) 4 (4) 6

33. Identify the missing number in the following sequence.
2, 10, 30, 68, ___, 222
(1) 120 (2) 130
(3) 134 (4) 150

34. A + B means A is the daughter of B, A x B means A is the son of B and A – B means A is the wife of B. If T – S x B – M, which of the following is NOT true?
(1) M is the husband of B (2) B is the mother of S
(3) S is the daughter of B (4) T is the wife of S

35. In the question below, there are three statements followed by four conclusions numbered I, II, III and IV. You have to consider every given statement as true, even if it does not conform to the well known facts. Read all the conclusions and then decide which of the conclusions can be logically derived from the given statements.
Statements: All frogs are snakes.
Some snakes are birds.
All birds are apples.
Conclusions: I. Some apples are frogs.
III. Some snakes are apples.
IV. All birds are snakes.
(1) Either I or II; and III follows (2) III and IV follows
(3) Either I or II follows (4) Either I or II; and either III or IV follows

36. In the following sequence, one number is wrong. Find the wrong number.
9, 23, 51, 106, 219, 643
(1) 23 (2) 51
(3) 106 (4) 219

37. Which option shows the correct water image of the characters given below?
SUPE2547DLR
(1) (2)
(3) (4)

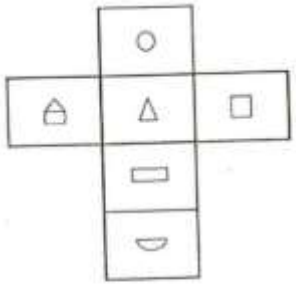
38. Ronald is elder to Veena while Amilia and Shree are elder to Parul who lies between Ronald and Amilia. If Amilia is elder to Veena, then which one of the following statements is necessarily true?
(1) Ronald is elder to Amilia (2) Amilia is elder to Shree
(3) Parul is elder to Shree (4) Parul is elder to Veena

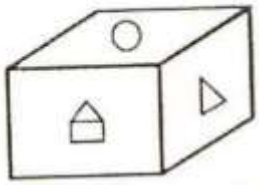
39. In the following question, a matrix of certain numbers is given. These numbers follow a certain trend, either row wise or column wise. Find the trend and choose the missing number from the given alternatives.

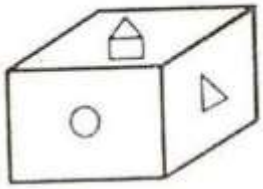
1	5	7	75
8	3	4	?
9	7	8	194

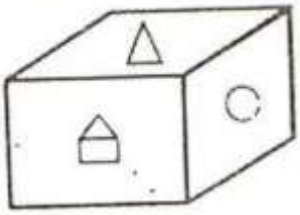
(1) 20 (2) 43
(3) 89 (4) 96

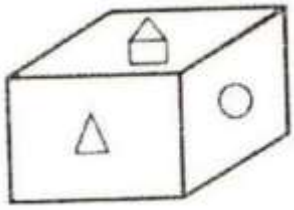
40. The figure given below is the unfolded position of a cubical dice. Select the option figure which is same as the figure, when it is folded



(1) 

(2) 

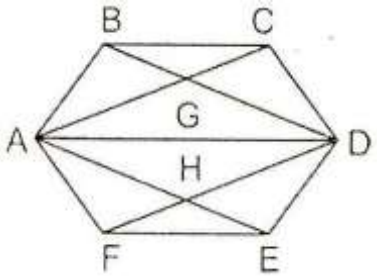
(3) 

(4) 

41. A wall clock is placed in a room. It chimes 8 times at 8 o' clock. A person 'X' present outside the room listens the 8 beats of chimes in 8 seconds. Assume that each chime of the wall clock takes equal time. To listen 11 chimes at 11 o' clock how much time will be required by person 'X'

(1) 11 seconds
(2) 11.43 seconds
(3) 12 seconds
(4) 12.43 seconds

42. A geometrical design has been drawn below. Find out the total number of quadrilaterals.



(1) 8
(2) 10
(3) 11
(4) 12

Directions (Questions 43 – 45): Study the following information and answer the questions given below it.

Six boys Prems, Kamal, Ramesh, Shyam, Tarun and Umesh go to University Sports Center and play a different game of football, cricket, tennis, kabaddi, squash and volleyball. A. Tarun is taller than Prem and Shyam.

B. The tallest among them plays kabaddi.

C. The shortest one plays volleyball.

D. Kamal and Shyam neither play volleyball nor kabaddi.

E. Ramesh plays volleyball.

F. If all six boys stand in order of their height then Tarun is in between Kamal and Prem; and Tarun plays football.

43. Who among them plays kabaddi?

(1) Kamal
(2) Ramesh

(3) Shyam (4) Umesh

44. Who will be at fourth place if they are arranged in the descending order of their heights?
(1) Prem (2) Kamal
(3) Tarun (4) Shyam

45. Who plays tennis?
(1) Kamal (2) Prem
(3) Tarun (4) Information insufficient

46. What comes next in the following sequence of codes? 1218199, 1006480, 814963, 643648, ____
(1) 366478 (2) 1442560
(3) 492535 (4) 253634

47. What value replaces the question mark?

(1) 18 (2) 24
(3) 36 (4) 45

48. A coding language writes English words in the coded form as

STAT θ δ θ γ
RAT δ θ β
SAY ε γ δ

The code dos not appear in the same order of the letters in the English words. On this basis, which of the following will be the code of the word TRAY?

(1)	ε β θ γ	(2)	β γ δ ε
(3)	β θ δ ε	(4)	θ δ γ ε

49. A work is expected to be completed by 20 workers in 25 days. The work is started by 10 workers. Then, after every 5 days, 5 more workers join the work. In how many days the work be completed?
(1) 20 (2) 25
(3) 30 (4) 35

50. Find the maximum length of a rod with negligible thickness which can be fitted into a cubical box of 1 meter length of each side.
(1) $\sqrt{2}$ (2) $\sqrt{2.25}$
(3) $\sqrt{3}$ (4) 2