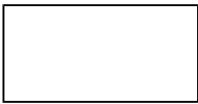


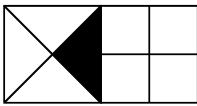
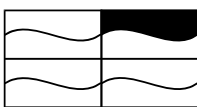
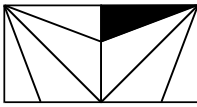
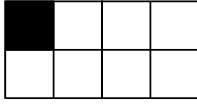
PART II /  
MATHEMATICS /

*Directions : Answer the following questions by selecting the most appropriate option.*

31. Which is true for a hexagonal pyramid ?
- (1) It has six faces and each face is a hexagon
  - (2) It has a hexagonal base with six triangular faces meeting at a point
  - (3) It has two hexagonal faces and six rectangular faces
  - (4) It has six hexagonal faces joined by six rectangular faces
32. The length of a rectangle is 'l' and its width is half of its length. What will be the perimeter of the rectangle if the length is doubled keeping the width same ?
- (1) 4l
  - (2) 5l
  - (3) 6l
  - (4) 3l
33. In the following, which is the greatest number ?
- (1)  $(4)^2$
  - (2)  $(2 \times 2 \times 2)^2$
  - (3)  $[(2 + 2)^2]^2$
  - (4)  $(2 + 2 + 2)^2$

34. A teacher asked in a class to represent  $\frac{1}{8}$

of . Which amongst the following is an incorrect representation ?

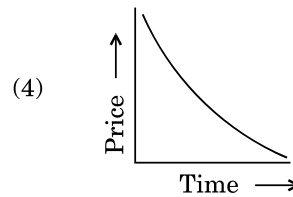
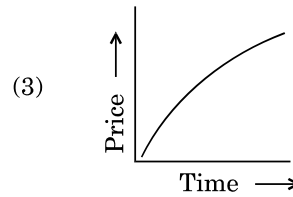
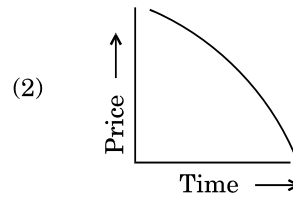
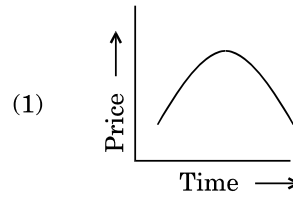
- (1) 
- (2) 
- (3) 
- (4) 

35. 407928 is read as
- (1) Four lakh seventy nine thousand twenty eight
  - (2) Forty seven thousand nine hundred twenty eight
  - (3) Forty thousand nine hundred twenty eight
  - (4) Four lakh seven thousand nine hundred twenty eight
36. If an operator  $\oplus$  is defined as
- $$4 \oplus 3 = 4 + 5 + 6$$
- $$5 \oplus 4 = 5 + 6 + 7 + 8$$
- $$6 \oplus 4 = 6 + 7 + 8 + 9$$
- what will  $n \oplus 8$  be equal to ?
- (1)  $n + 28$
  - (2)  $8n + 28$

(3)  $8n + 36$

(4)  $n + 36$

“These days prices have started rising.”  
Which amongst the following graphs represents this situation ?



38. The weight of some mangoes is 2 kg 600 g and that of some apples is 1 kg 450 g. The weight of the mangoes is greater than that of the apples by

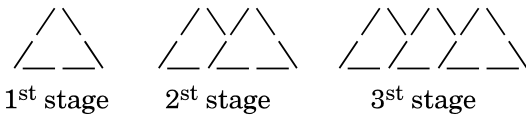
(1) 4 kg 50 g

(2) 1 kg 150 g

(3) 1 kg 200 g

(4) 150 g

39. Examine the following matchstick patterns :



If the pattern continues, how many matchsticks are needed in the 15<sup>th</sup> stage ?

- (1) 105
- (2) 65
- (3) 61
- (4) 62

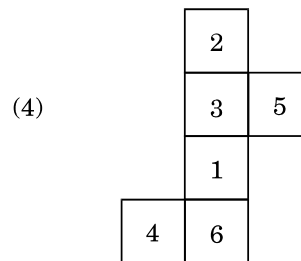
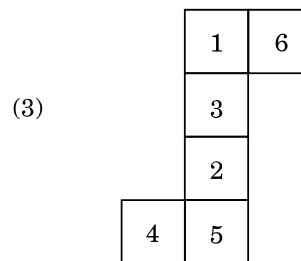
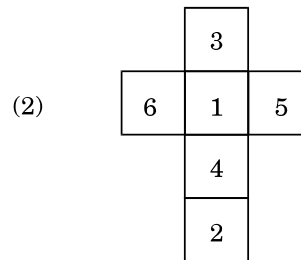
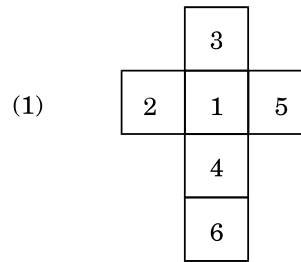
40. Look at the following table :

Station	Bus 1	Bus 2	Bus 3
New Delhi	Departure 19:15	12:30	16:45
Faridabad	Arrival 20:22	13:25	19:10
	Departure 20:37	13:35	19:22
Mathura	Arrival 00:40	18:10	21:55

Which bus takes the least time to reach Mathura from New Delhi ?

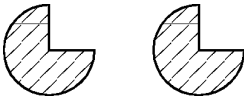
- (1) Bus 1
- (2) Bus 2
- (3) Bus 3
- (4) Both Bus 2 and Bus 3 take equal time

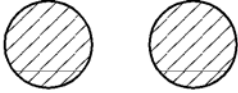


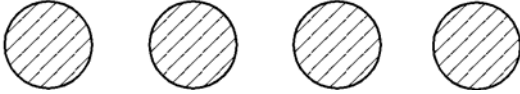
In a dice, the numbers on the opposite faces add up to 7. Which amongst the following will fold into a dice ?



42. The number 49532 rounded off to the nearest thousand is
- (1) 49000
  - (2) 49500
  - (3) 41000
  - (4) 50000

43. How many 4-digit numbers are there in the Hindu-Arabic Numeration System ?
- (1) 99
  - (2) 8999
  - (3) 9999
  - (4) 9000

44.  is  $\frac{3}{4}$  of a 'unit'. What will be  $1\frac{1}{2}$  ?

- (1) 
- (2) 
- (3) 
- (4) 

45. A rhombus has diagonals of length 8 cm and 6 cm. Find its perimeter.
- (1) 18 cm
  - (2) 20 cm
  - (3) 24 cm
  - (4) 28 cm

46. When faced with word problems, Rajan usually asks "Should I add or subtract ?" "Should I multiply or divide ?". Such questions suggest
- (1) Rajan seeks opportunities to disturb the class
  - (2) Rajan has problems in comprehending language
  - (3) Rajan lacks understanding of number operations
  - (4) Rajan cannot add and multiply

47. When teaching 'shapes', a teacher can plan a trip of historical places as
- (1) she has completed most of the syllabus well in time and needs to provide leisure
  - (2) it would be a good break from the routine mathematics class and an opportunity to improve communicative skills
  - (3) field trips have been recommended by CBSE, so they are a must
  - (4) shapes are an integral part of any architecture and such trips encourage connections across disciplines

48. The NCF (2005) considers that Mathematics involves 'a certain way of thinking and reasoning'.
- From the statements given below, pick out one which does **not** reflect the above principle :
- (1) The way the material presented in the textbooks is written
  - (2) The activities and exercises chosen for the class
  - (3) The method by which it is taught
  - (4) Giving students set formulae to solve the numerical questions
49. Sequence the following tasks as they are taken up while developing the concept of measurement :
- a. Learners use standard units to measure length.
  - b. Learners use non-standard units to measure length.
  - c. Learners verify objects using simple observation.
  - d. Learners understand the relationship between metric units.
- (1) a, b, d, c
  - (2) b, a, c, d
  - (3) c, b, a, d
  - (4) d, a, c, b
50. Sequence the following tasks as they would be taken up while developing the understanding of shapes and space across primary classes :
- a. Matches the properties of 2-D shapes by observing their sides and corners
  - b. Describes intuitively the properties of 2-D shapes
  - c. Sorts 2-D shapes
  - d. Describes the various 2-D shapes by counting their sides, corners and diagonals
- (1) d, b, a, c
  - (2) c, b, d, a
  - (3) a, d, b, c
  - (4) c, a, d, b
51. "Problem solving" as a strategy of doing mathematics involves
- (1) extensive practice
  - (2) using clues to arrive at a solution
  - (3) activity based approach
  - (4) estimation
52. The purpose of a diagnostic test in mathematics is
- (1) to know the gaps in children's understanding
  - (2) to give feedback to the parents
  - (3) to fill the progress report
  - (4) to plan the question paper for the end-term examination

53. Vikas teaches mathematics to a class of 56 students. He believes that conducting a test is effective if the feedback is given immediately. He conducted a short class test of 10 marks. What is the best possible way of giving the feedback effectively ?

- (1) He can let the students check each other's answer
- (2) He can explain the solution of each problem on the board and ask the students to check their answer on their own
- (3) He can have a whole class discussion on ways in which they have got their solutions and which is the effective strategy to arrive at the correct answer
- (4) Pick out any copy at random and discuss the method followed in the copy on the board

54. To introduce the concept of area, a teacher can start with

- (1) comparing area of any figure with the help of different objects like palm, leaf, pencil, notebook, etc.
- (2) calculating area of a rectangle by finding length and breadth of a rectangle and using the formula for area of a rectangle (i.e. length × breadth)
- (3) calculating area of figures with the help of counting unit square
- (4) explaining of formulae for finding area of figures of different shapes

55. To introduce the concept of fractions, a teacher can begin with

- (1) identifying numerators and denominators of different fractions
- (2) finding fractions on a number line
- (3) writing fractions in the form  $\frac{a}{b}$  of where  $b \neq 0$
- (4) identifying fractional parts of things around them

56. While teaching comparison of fractions in which the numerators are same

e.g.  $\frac{3}{5}$  and  $\frac{3}{7}$

Rohit's response was "since the numerators are same and since 7 is larger than 5, therefore  $\frac{3}{7}$  is bigger than  $\frac{3}{5}$ ."

This suggests that

- (1) Rohit does not understand the magnitude of fractions
- (2) Rohit does not know the concept of numerator and denominator
- (3) Rohit does not know the concept of equivalent fractions
- (4) Rohit has not practised well

57. When teaching addition of fractions, a teacher came across the following error :

$$\frac{1}{2} + \frac{1}{3} = \frac{2}{5}$$

What remedial action can the teacher take in such a situation ?

- (1) Ask the child to practise as much as she can
- (2) No intervention is needed because she will understand as she grows
- (3) Help the child to understand the magnitude of each fraction
- (4) Help the child to understand the concept of LCM

58. The chapters in the NCERT textbook of mathematics of Class-IV have titles like “The Junk Seller”, “Trip to Bhopal”, “The Way the World Looks”.

This shift has been done to

- (1) challenge the students to guess the mathematical content in the chapters
- (2) make them understand differently
- (3) make it interesting by relating it to everyday life
- (4) know about selling junk and travelling

59. To be a “good” mathematician one must be able to

- (1) memorise most of the formulae
- (2) solve the problem in no time
- (3) understand, apply and make connections across the concepts
- (4) master the techniques of answering questions

60. “Start a discussion in the class on things in the child’s environment which roll and slide. Help children to look at their shapes and see how some things roll and others slide.”

*Source : Math Magic II, NCERT*

Suggestions like this have been given in the NCERT textbook of Class-II to help a teacher understand that

- (1) discussion is the best strategy for the mathematics classroom
- (2) it is imperative for the teachers to draw the children’s attention to the things around them
- (3) discussions supplemented with demonstration help students to understand concepts better
- (4) discussions bring multiple perspectives into the classroom