

Royal University of Bhutan
Paro College of Education
Spring Semester Examination - 2014

B.Ed(P) II - Mathematics in Lower Primary 2 (MAT202)

Full marks: 100

Time: 3 hours

Instruction: *This question paper consists of two sections, A and B. Section A is **COMPULSORY** and consists of 10 multiple choice type questions and section B consists of long answer type questions. The weighting for section A is 20 marks and section B is 80 marks. Every question in section A is worth 2 marks and section B 20 marks. The intended marks for the questions in section B are given in the brackets. Instruction for each section is mentioned accordingly.*

You are NOT ALLOWED to use ANY ELECTRONIC DEVICES.

Section - A COMPULSORY (10 x 2 = 20 marks)

There are 10 questions answer all the questions. Choose the correct response and write in the answer script with the answer against the question number.

Question 1 Multiple Choice

(10 x 2 = 20 marks)

- a. The side face of a hexagonal prism will always have the shape of
 - i. Triangle.
 - ii. Rectangle
 - iii. Hexagon
 - iv. Trapezoid

- b. A geometric solid shape having five faces, 8 edges and 5 corners is a
 - i. Rectangular prism
 - ii. Triangular prism
 - iii. Rectangular pyramid
 - iv. Triangular pyramid

- c. The capacity of a container always depends on
 - i. Volume of the container
 - ii. Mass of the container
 - iii. Height of the container
 - iv. Space available inside the container

- d. The best estimate for the length of an A4 size paper is
- i. 30 cm
 - ii. 20 cm
 - iii. 30 mm
 - iv. 50 mm
- e. If a die numbered 1 to 6 is rolled once, the theoretical probability of getting numbers divisible by 2 is about
- i. 25%
 - ii. 50%
 - iii. 33.3%
 - iv. 66.6%
- f. All the following are the properties of Rhombus **EXCEPT**
- i. All four sides are always equal
 - ii. Opposite angles are equal
 - iii. Both the diagonals are always equal
 - iv. Opposite sides are parallel
- g. There are 28 eggs in a basket. If 12 eggs represent one whole, then the fractional form of representing 28 eggs is
- i. $2\frac{1}{2}$
 - ii. $2\frac{1}{3}$
 - iii. $2\frac{2}{3}$
 - iv. $2\frac{1}{4}$
- h. The best way to represent the distance covered by a running car is through
- i. Bar graph
 - ii. Pictograph
 - iii. Pie-chart
 - iv. Line graph

- i. From a pack of cards, the theoretical probability of taking out either red queen or red king will be.
- i. $\frac{1}{13}$
 - ii. $\frac{2}{13}$
 - iii. $\frac{1}{26}$
 - iv. $\frac{4}{13}$
- j. Which one of the following questions shows subtraction of three digit number from 4 digit number with two regroupings
- i. $4382 - 165$
 - ii. $7864 - 3977$
 - iii. $8976 - 592$
 - iv. $7662 - 498$

Section B (4 x 20 = 80)

*There are **SIX** questions in this section. Answer any **FOUR** questions. Sub-questions must be answered in order and completely for every attempted question. Intended marks for all the sub-questions are given in the brackets.*

****NOTE:** You will not be provided with graph paper for Q. 6. a), so if you are attempting the question draw the graph in the answer script itself appropriately.*

Question 2

- a. How would you find the area and perimeter of an irregular flat shape? Draw suitable diagram to support your solution.
- b. What are the two approaches of introducing addition? Explain using your own story and represent the story using appropriate illustrations.
- c. Which 2D shapes are introduced in class I? How would you introduce these 2D shapes to class I children?

(8 + 6 + 6 = 20 marks)

Question 3

- a. Here is a multiplication question: 47×53 . Solve and explain the given problem using any three different methods. Explain the method that you liked the most with good justifications.
- b. What are the two approaches of introducing division to class II children? Explain with appropriate illustrations and your own example.
- c. What are some of the non-standards units for measuring capacity? Design an activity to introduce measuring capacity using non standards units.

(8 + 6 + 6 = 20 marks)

Question 4

- a. What do you mean by measuring length directly and indirectly? Describe an activity each to familiarize children measuring length directly and indirectly.
- b. Here is a question on addition for class III. $432 + 87$. How would you explain this addition question using base ten blocks. Draw picture wherever necessary and explain as you would explain in the real classroom situation.
- c. Tshering rotates a spinner numbered 1 to 10. What would be the theoretical probability of getting:
 - i. A number divisible by 3?
 - ii. An even number?
 - iii. Numbers greater than 6?
 - iv. Number 10 and 2
 - v. Number 8?
 - vi. Number 11?

(8 + 6 + 6 = 20 marks)

Question 5.

- a. Explain line symmetry with at least two relevant examples using appropriate pictures or illustrations. Describe any two activities that can be carried out while teaching symmetry.
- b. What are the differences between a prism and a pyramid? Draw a “net” for making a triangular pyramid.
- c. Explain the two types of probability. Write 2 examples each for the probability which is certain, possible and impossible.

(8 + 6 + 6 = 20 marks)

Question 6.

- a. The body masses (in kilograms) of 40 children in class III is given below. Choose a suitable class interval then make a tally sheet and draw bar graph to represent this information.

28	32	31	43	36	29	34	28	40	39
27	34	26	35	44	45	47	37	42	34
26	39	41	33	26	39	40	29	30	33
27	34	43	39	28	42	45	41	30	38

- b. 'All rectangles with same perimeter will have same area.' Do you agree or disagree? Justify your answer giving appropriate illustrative examples.
- c. What are the 4 basic 3 D shapes that are introduced in class PP? How would you introduce these 4 basic 3 D shapes to class PP children?

(8 + 6 + 6 = 20 marks)

Question 7.

- a. Design a game on multiplication suitable for class III children and write the complete and clear instructions of the game. You need to include illustrations and game samples wherever necessary.
- b. Where do we apply the idea of fraction in day to day life? List three examples. How would you introduce halves and quarter to class II children. Draw appropriate illustration wherever necessary.
- c. In a feely bag there are 24 snap cubes. 12 of them are black, 9 are green and 3 are white. If you take out a snap cube, which colour snap cube are you more likely to take out? Why? If 5 of the black snap cubes are replaced by white snap cubes which of the three different colour snap cubes will have more chances of taking out? How?

(8 + 6 + 6 = 20 marks)