

**Four Year Under Graduate Programme (FYUGP)  
As per Provisions of NEP-2020 to be implemented  
from academic year -2022 onwards.**



**Mathematical and Computational Thinking and  
Analysis.**

**Subject Code – CC-5 (Syllabus for semester –II)**

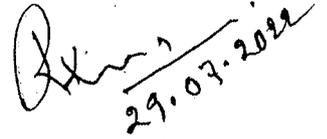
***for***

**All constituent / affiliated colleges under Binod  
Bihari Mahato Koyalanchal University, Dhanbad  
(Jharkhand).**

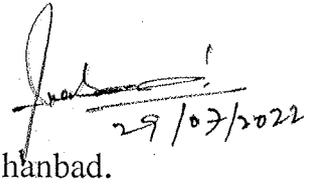
**UG: MATHEMATICS Revised CBCS B.B.M.K.U DHANBAD**

**Members of Board of Studies (BOS) of revised CBCS as per provisions of NEP - 2020 for FYUGP in Mathematics of the Binod Bihari Mahto Koyalanchal University, Dhanbad.**

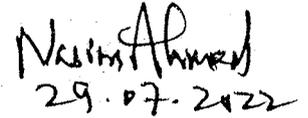
**1. Chairperson: - Dr. R. K. Tiwary**  
Associate professor & Head  
University Department of Mathematics  
Binod Bihari Mahto Koyalanchal University, Dhanbad.

  
29.07.2022

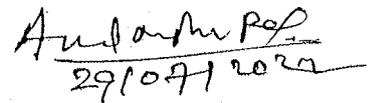
**2. Member: - Dr. Shiv prasad**  
Assistant Professor  
University Department of Mathematics  
Binod Bihari Mahto Koyalanchal University, Dhanbad.

  
29/07/2022

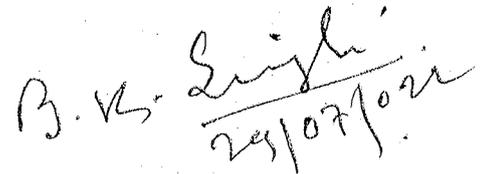
**3. Member: - Dr. Nasim Ahmad**  
Assistant Professor  
Head Department of Mathematics,  
PKRM College, Dhanbad.

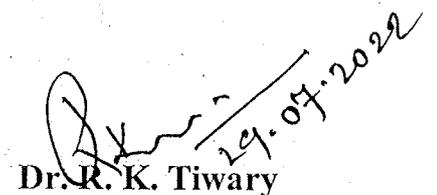
  
29.07.2022

**4. Member: - Dr. Anand Mohan Prasad**  
Assistant Professor  
Head Department of Mathematics,  
Chas College Chas, Bokaro.

  
29/07/2022

**5. Special Invite: - Dr. B. K. Singh (Rtd.)**  
Associate professor & Head  
Head Department of Mathematics,  
B.S. City College, Bokaro.

  
29/07/2022

  
29.07.2022

**Dr. R. K. Tiwary**  
**H.O.D**  
**BBMKU, Dhanbad**

**H.O.D.**  
P.G. Department of Mathematics  
B.B.M.K.U Dhanbad

Semester	Subject Name	Subject code	Credit	Teaching hours
II	Mathematical and Computational thinking and Analysis	C C -5	2	30

Full Marks (F.M.) :- 100, Pass Marks, (P.M): 40, Time : 3 Hrs.

### General Instruction :

1. Group A carries very short answer type compulsory questions.
2. Answer 4 out of 6 subjective /descriptive questions given in group B.
3. Answer in your own words as far as practicable
4. Answer all sub parts of a question at once place.
5. Numbers in right indicate full marks of the question

### Syllabus :-

Unit – 1 Logic: Statement, truth table, quantifiers ,

Connectives and tautology, Mathematical induction

( 2 questions)

Unit -2- Sets :- Sets and their representations, Empty set,

Finite and Infinite sets, equal Sets, subsets,

Power set, Universal set , venn diagrams, Union

and Intersection of Sets. Difference of Sets , ,

complement of a set.

( 2 questions)

**Unit-3** Arithmetic :- Fraction, Decimal Fraction, Recurring Decimals, square roots, percentage, simple interest, compound Interest, Area, volume and Area of surfaces. (2 questions)

Unit :- 4 Statistics and probability :- Data collection and presentation using bar chart, Column chart line chart, pie chart, scatter chart, calculation of frequency, Measure of central tendency, Mean, median and Mode, definition of probability, Elementary properties, addition theorem, multiplication theorem, Independent events.

(3 questions)

**Books Recommendation :-**

1. N.K. Singh Text book of probability and statistics, 1<sup>st</sup> edition, Pragati Publication, Meerut.
2. Probability and Statistics (4<sup>th</sup> Edition) 4<sup>th</sup> Edition Morris H, Degroot(Author) Mark J, Schervish, Pearson Education Limited 2014,
3. Arithmetic by Lalji Prasadd published by Students friends. ,

Subject/ Code		Exam Year
F.M. = 100	Time=3Hrs.	
<b>General Instructions:</b>		
i. Group A carries very short answer type compulsory questions.		
ii. Answer 4 out of 6 subjective/ descriptive questions given in Group B.		
iii. Answer in your own words as far as practicable.		
iv. Answer all sub parts of a question at one place.		
v. Numbers in right indicate full marks of the question.		
<b>Group A</b>		
1.		[10x1=10]
i. ....	vi. ....	
ii. ....	vii. ....	
iii. ....	viii. ....	
iv. ....	ix. ....	
v. ....	x. ....	
2. ....		[5]
3. ....		[5]
<b>Group B</b>		
4. ....		[20]
5. ....		[20]
6. ....		[20]
7. ....		[20]
8. ....		[20]
9. ....		[20]
<b>Note:</b> There may be subdivisions in each question asked in Theory Examination.		

*[Handwritten signatures and scribbles]*