

Add on Course

on

BASIC MATHEMATICS FOR COMPETITIVE EXAMINATIONS

Organized by the

Department of Mathematics

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IQAC

Polba Mahavidyalaya,Polba, Hooghly, Pin-712148 (Affiliated to the University of Burdwan) 23rd May 2023 to 8th June, 2023 (30 Hrs.)



Chief Patron

Mr. Narugopal Kaibarta

(Teacher-in-Charge)

Instructors:

- 1. Dr. Amrita Das, Assistant Professor, Department of Mathematics, Polba Mahavidyalaya, Polba.
- Mr. Palash Sadhu, SACT, Department of Mathematics, Polba Mahavidyalaya, Polba.



Amila Day 62/2019



Polba Mahavidyalaya Polba, Hooghly Pin-712148 (Affiliated to the University of Burdwan)

Add on Course

on
BASIC MATHEMATICS FOR COMPETITIVE EXAMINATIONS

Organized by the

Department of Mathematics

& IQAC

Duration: 30 Hours 23rd May 2023 to 8th June, 2023

Chief Patron

Mr. Narugopal Kaibarta (Teacher-in-Charge)

Eligibility

2nd and 4th semester students of B.Sc. General (ongoing)

Teacher in Charge
Polba Mahavidyalaya
Polba, Hooghly, West Bengal

• No Course fees/Registration fees: The course is free for interested students

Rules & Regulations related to the Course

- The assessment process will have a total score of 100. Out of these 10 marks for attendance.
- The process of evaluation will be explained during the class sessions.
- Students must attend all the assessments that have been scheduled to be eligible for certification.
- Every student must have a minimum attendance of 70% throughout the course to receive any certificate.
- The certificate's category will be decided based on the marks obtained, following the subsequent guidelines:

Score on 100	Grade
90-100	A+
80-89	A
70-79	B+
60-69	В
50-59	C
Below 50	Fail

^{*}Certificates will be issued only to those participants who complete the Course successfully by following rules & and regulations.

Course Design

Course	Basic Mathematics for Competitive Examinations	
Eligibility	2 nd and 4 th Sem students of undergraduate level	
Faculty	Internal faculty	
Course Fee	Nil	
Intake Capacity	20	
Class Duration	1 Class-1 hr.2hrs / day.	
Course Duration	30 hours	
Assessment Process	AttendanceWritten test	
Students' Fee	edback	



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Course Objectives

This 30 hour course on Basic Mathematics for Competitive Examinations will:

- 1) Help students acquire skills in solving quantitative aptitude by simple methods.
- 2) Help students acquire skills in solving quantitative aptitude in short span of time.
- 3) Help learning Maths Tricks & Tips for Competitive Exams.
- 4) Provide tips to improve Maths for Competitive Exams.
- 5) Enrich their knowledge and to develop their logical reasoning thinking ability.

Course Description

Mathematics is a subject that deals with numbers, shapes, logic, quantity and arrangements. Mathematics teaches to solve problems based on numerical calculations and find the solutions. Learning mathematics will help students to build their logical thinking and problem-solving skills. It has huge applications in day-to-day life. The basic arithmetic operations such as addition, subtraction, multiplication and division are the most important part of our lives. From calculating expenses to determining time schedules or even cooking, basic mathematical knowledge helps us navigate numerous life situations. Yet, many find themselves intimidated by numbers or lost in the maze of operations. Our aim is to ensure that every student walks away with a clear understanding and a renewed confidence in their ability to handle foundational mathematical problems.

Particularly, this course will indulge in the basic mathematics required for the competitive examinations including Banking, Railway, SSC, WBCS, PSC, UPSC, etc. Accordingly, the course is divided into three cycles with three practice tests namely, Practice test I, Practice test II and Practice test III.

Practice test I will follows the questions on Numbers and number system, HCF & LCM, Decimal Fractions, Simplification, Square and Cube roots and Average.

Practice test II will include questions from Problems on Ages, Surds and Indices, Percentage, and Loss, Ratio and Proportion, Partnership, Chain rule, Mensuration, Trigonometry.

Practice III include questions from Time and work, Time and distance, Simple and Compound interest, Data Interpretation/Reasoning.

Overall, the course may prove itself beneficial to all the students who are

- Facing Current Academic Challenges: Battling through a challenging math course
- Transitioning in their Career: Stepping into a job that requires math proficiency
- Simply Curious: Wishing to review, refresh, or extend their mathematical horizons

This course offers tailored content that breaks down complex ideas into digestible modules, backed by practical examples that make learning both engaging and effective.



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Course Schedule

lour	Торіс	Teaching Activities			
-4	 Course Introduction Introduction to Numbers and number system HCF & LCM 	The state of the s			
-9	 Decimal Fractions Simplification Square and Cube roots Average 	Practice test-I			
9-12	Problems on numbersProblems on AgesSurds and Indices	Practice test-II			
12-17	PercentageProfit and Loss				
17-23	 Ratio and Proportion Partnership Chain rule Mensuration Trigonometry 				
23-26	 Time and work Time and distance Simple and Compound interest Miscellaneous 	Practice test-III			
26-28	Data Interpretation/Reasoning				
28-30	Assessment (2 hrs. written test)				

Reference Books:

- R. S. Aggarwal, Quantitative Aptitude (Fully solved), Reprint 2016, S. Chand.
- R.V.Praveen, Quantitative Aptitude and Reasoning, 2nd Revised Edition 2013, Prentice-Hall of India Pvt. Ltd.
- G. K. Ranganath, C. S. Sampangiram and Y. Rajaram, A text Book of business Mathematics, 2008, Himalaya Publishing House.

Instructors:

- 1. Dr. Amrita Das, Assistant Professor, Department of Mathematics, Polba Mahavidyalaya, Polba.
- 2. Mr. Palash Sadhu, SACT, Department of Mathematics, Polba Mahavidyalaya, Polba.



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Course Outcome

This course of basic Mathematics for Competitive Examinations will:

- Provide a platform to the students to expertise the Basic concepts of Mathematics needed for most competitive exams including Banking, Railway, SSC, WBCS, PSC, UPSC, etc.
- Establish a framework to help students acquire the knowledge and expertise necessary to secure employment opportunities in the Government sector.
- Expertise students in solving problems easily by using shortcut methods with time management by analyzing the problems logically and approaching them differently.
- Turn students' mathematical apprehensions into a strength.



Amila Day 68/23

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To, The Teacher-in-Charge, Polba Mahavidyalaya, Polba, Hooghly, Pin- 712148.

Sub: Seeking permission to organize an Add on course on "BASIC MATHEMATICS FOR COMPETITIVE EXAMINATIONS"

Respected Sir,

With due respect, I, on behalf of the Department of Mathematics, Polba Mahavidyalaya, would like to request your kind permission to organize a thirty hour Add on course entitled "BASIC MATHEMATICS FOR COMPETITIVE EXAMINATIONS" during the period of 23rd May to 8th June, 2023.

Hope you would be kind enough to provide your administrative and financial permission for the forthcoming Add on course.

Thanks and Regards,

Junia Daz 28/04/2023

Dr. Amrita Das,

Assistant Professor of Mathematics,

Polba Mahavidyalaya,

Hooghly-712148.

Allowed Whater 1615123

Teacher in Charge Polba Mahavidyalaya Polba, Hooghly, West Bengai Telephone: (03213) 225128, 225133

Fax: (03213) 225128

officepolbamahavidyalaya@gmail.com

web site: polbamahavidyalaya.com e-mail:



POLBA MAHAVIDYALAYA

Post Office - Polba, District - Hooghly, West Bengal, Pin 712148

AFFILIATED TO THE UNIVERSITY OF BURDWAN
Recognized under Sections 2(f) & 12(B) of the UGC Act. 1956
NAAC Accredited

Notice

All Teaching, Non-Teaching Staff and Students of Polba Mahavidyalaya are hereby informed that the Department of Mathematics in collaboration with IQAC is going to organize an Add-on-Course entitled "Basic Mathematics for Competitive Examinations" from 23rd May 2023 to 8th June 2023 at the College premises.

Interested students are hereby informed to contact the respective teacher to enroll their name in this course immediately.

Coordinator IOAC

Teacher-in-Charge

Teacher in Charge
Polba Mahavidyalaya
Polba, Hooghly, West Bengal

List of Students Enrolled in the Add On Course "Basic Mathematics for Competitive Examinations" for the session 2022-23

Sl. No.	Roll No.	Subject	Semester	Name	Signature
į	801	B.S. (G)	Scm-(li)	Prankik Dubla	Prantik Dulla
2.	851	Bisc(or)	Sem IV	Isha Das	Isha Das
3	852	B. Sc(h)	SemIV	Keya Hos	Keya Dos

HoD, Department of Education
Mathematics

Teacher-in-Charge

Teacher in Charge
Polba Mahavidyalaya
Polba, Hooghly, West Bengal



ANCE OF PUPILS OF 28rd May to 08th June 2023 REGISTER OF ATTEND-FOR THE MONTH ATTEND -No. of days ANCE 전 20 22 22 24 25 25 12 27 28 29 30 31 Thesent without the wind of the state of the NAME OF PUPILS Roll No. REMARKS 20 21 22 23 24 25 26 27 28 29 30 30 00 PRANTIK DUTTA 1. 801 2021 22 23 24 25 24 27 28 29 20 00 2. 851 ISHA DAS 3. 852 KEYA DAS 18 19 20 21 22 23 24 25 24 27 28 28 02 No. of classed by 1) Dr. Amrita Das 2) Mr. Palash Sadlu -> 10 Total -> 30 08/06/23 08 06 23 No. Present daily ... No. Absent daily ... TOTAL No. of working days during the Month -Average Daily Attendance Percentage of Attendance during the Month -SREEMA TRADERS, 45, Beniatola Lane-09 Ph. 2241 6838 Hindus -Muslims -+ Others -No. of Free Students -No. of 1/2 Free Students -

Polba, Hooghly-712148 Add-on Course (23rd May to 08th June, 2023) Assessment

Total Marks: 50 Time: 1hr.

Each question carries 2.5 Marks Answer all the questions

1. If $3x + 7 = x^2 + M = 7x + 5$, what is the	(a) 4% (b) 6% (c) 15% (d) 24%		
value of 120% of M?			
(a) 8.90 (b) 9.90	7. Groundnut oil is now being sold at Rs 27 per kg. During last month its cost		
(c) 9.98 (d) None of	was Rs 24 per kg. Find by how much %		
these	a family should reduce its consumption,		
2. P is six times as large as q. The percent	so as to keep the expenditure same.		
that q is less then p, is	(a) $11\frac{1}{9}$ (b) $11\frac{1}{11}$ %		
(a) $16\frac{2}{3}$ (b) 60	(c) $11\frac{9}{10}\%$ (d) $9\frac{1}{10}\%$		
(e) 83 ⁷ (d) 90	(0) $11\frac{1}{10}$		
salva e filla (TI 3 et A rozemesse) telli - belli	8. / 10% of the inhabitants of a village		
3. If two numbers are respectively 20%	having died of cholera, a panic set in,		
and 50% of a third number, what is the	during which 25% of the remaining		
percentage of the first number to the	inhabitants left the village. The		
second?	population is then reduced to 4050. Find		
(a) 10 (b) 20	the number of original inhabitants.		
(c) 30 (d) 40	(a) 5000 (b) 6000		
4. A sum of Rs 4558 is divided among A,	(c) 7000 (d) 8000		
B and C such that A receives 20% more	9. Chunilal invests 65% in machinery,		
than C, and C receives 25% less than B.	20% in raw material and still has Rs		
What is A's share in the amount?	1,305 cash with him. Find his total		
(a) Rs 1548 (b) Rs 1720	investment.		
(c) Rs 1290 (d) Rs 1345	(a) Rs 6,500 (b) Rs 7,225		
5. The digit at unit place of a two-digit	(c) Rs 8,500 (d) None of		
number is increased by 100% and the	these these		
digit at ten places of the same number is	10. When the price of a pressure cooker was		
increased by 50%. The new number	increased by 15%, the sale of pressure		
thus formed is 19 more than the original	cookers decreased by 15%. What was		
number. What is the original number?	the net effect on the sales?		
(a)22 (b) 63	(a) 15% decrease (b) no effect		
(c) 24 (d) None of	(c) 2.25% increase (d) 2.25%		
these	decrease		
6. The owner of a boutique decides to	11. If 12% of 75% is greater than 5% of a		
calculate the percentage of customers	number by 75, the number is		
who purchase hats. If 40 per cent of the	(a) 1875 (b) 1890		
store's customers decide to purchase	(c) 1845 (d) 1860 When the price of sugar was increased		
items, and of those customers 15	1 2004		
percent purchase hats, then what per cent of the store's customers purchase	by 32%, a family reduced its consumption in such a way that the		
hats?	expenditure on sugar was only10%		
nats:	expenditure on sugar was only 10%		

Polba, Hooghly-712148

Add-on Course (23rd May to 08th June, 2023) Assessment

Total Marks: 50

Time: 1hr.

Each question carries 2.5 Marks Answer all the questions

more than before. If 30 kg were consumed per month before, find the new monthly consumption.

(a) 20kg

((b) 25kg

(c) 30 kg

(d) None of

these

A's income is 60% of B's income, and A's expenditure is 70% of B's expenditure. If A's income is 75% of B's expenditure, find the ratio of A's savings to B's savings.

(a) 5:1

(b) 1:5

(c) 3.5:1

(d) 2:7

The ratio of salary of a workers in July to that in June was $2\frac{1}{2}$: $2\frac{1}{4}$, by what % the salary of July more than salary of June. Also find by what % salary if June was less than that of July.

(a) 11¹/₉ % and 10%

(b) 10% and

114%

15.

(c) Both 10%

(d) Both $11\frac{1}{9}\%$

In a housing society, 30 per cent of the residents are men over the age of 18 and 40 per cent are women over the age of 18. If there are 24 children living in the housing society, then how many total residents live?

(a) 32

(b)/80

(c) 94

(d) 112

There is an increase of 30% in the production of milk chocolates in Amul Dairy in one month. If now it is 9, 100 milk chocolates per month, what was it on month ago?

(a) 10,000 chocolates (b)

9000

7000

chocolates

(c) 8000 chocolates

ŋ

chocolates

In a college election between two rivals,

by 160 votes, The total number of votes polled was

(a) 900

(P) 800

(c) 700

(d) 600

18. A scooter costs Rs25,000 when it is brand new. At the end of each year, its value is only 80% of what it was at the beginning of the year. What is the value of the scooter at the end of 3 years?

(a) Rs 10,000

(b) Rs 12,500

(e) Rs 12,800

(d) Rs 12,000

The income of A is 150% of the income of B and the income of C is 120% of the income of A. If the total income of A, B and C together is Rs 86000, what is C''s income?

a candidate who got 40% of the total votes polled, was defeated by his rival

(a) Rs 30000

(b) Rs 32000

(c) Rs 20000

(d) Rs 36000

If the price of sugar id increased by 7%, then by how much per cent should a housewife reduce her consumption of sugar, to have no extra expenditure?

(a) 7 over 107% (b) 107 over 100%

(c) 100 over 107%

(d) 7%

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Prontik Dulla

Prontik Dulla

Name-Isha Das Roll-851 Sem-IV

POLBA MAHAVIDYALAYA

Polba, Hooghly-712148 Add-on Course (23rd May to 08th June, 2023) Assessment

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that q is less then p, is	\sqrt{a}) 11½ (b) 11½%
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3. If two numbers are respectively 20%	having died of cholera, a panic set in,
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second?	population is then reduced to 4050. Find
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digit at ten places of the same number is	increased by 15%, the sale of pressure
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thus formed is 19 more than the original	the net effect on the sales?
number. What is the original number?	the state of the s
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items, and of those customers 15	12. When the price of sugar was increased
percent purchase hats, then what per	by 32%, a family reduced its
cent of the store's customers purchase	consumption in such a way that the
hats?	expenditure on sugar was only10%

Polba, Hooghly-712148

Add-on Course (23rd May to 08th June, 2023) Assessment Total Marks: 50

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more than before. If 30 kg were consumed per month before, find the new monthly consumption.

(a) 20kg

(6) 25kg

(c) 30 kg

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(d) 2:7.

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(a) 111 % and 10%

10% and

111%

15.

(c) Both 10%

(d) Both 111%

In a housing society, 30 per cent of the residents are men over the age of 18 and 40 per cent are women over the age of 18. If there are 24 children living in the housing society, then how many total residents live?

(a) 32

V6) 80

(c) 94

(d) 112

There is an increase of 30% in the 16. production of milk chocolates in Amul Dairy in one month. If now it is 9, 100 milk chocolates per month, what was it on month ago? (b)

(a) 10,000 chocolates

9000

chocolates

(c) 8000 chocolates

7000 (d)

chocolates

In a college election between two rivals,

by 160 votes, The total number of votes polled was (b) 800

(a) 900

VI-mas 5

Time: 1hr.

(c) 700

(d) 600

A scooter costs Rs25,000 when it is brand new. At the end of each year, its 48. value is only 80% of what it was at the beginning of the year. What is the value of the scooter at the end of 3 years?

(a) Rs 10,000

(b) Rs 12,500

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The income of A is 150% of the income of B and the income of C is 120% of the income of A. If the total income of A, B and C together is Rs 86000, what is C"'s

a candidate who got 40% of the total votes polled, was defeated by his rival

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20

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(c) 100 over 107%

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POLBA MAHAVIDYALAYA

Polba, Hooghly-712148 Add-on Course (23rd May to 08th June, 2023) Assessment

Time: 1hr. Total Marks: 50

Each question carries 2.5 Marks Answer all the questions

Polba, Hooghly-712148

Add-on Course (23rd May to 08th June, 2023) Assessment

18.

20

Total Marks: 50

Time: 1hr.

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more than before. If 30 kg were consumed per month before, find the new monthly consumption.

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(c) 30 kg

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(b) 1:5

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14.

(d) 2:7

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(a) 11½ % and 10%

(b) 10% and

 $11\frac{1}{9}\%$

(c) Both 10%

(d) Both 11½%

In a housing society, 30 per cent of the residents are men over the age of 18 and 40 per cent are women over the age of 18. If there are 24 children living in the housing society, then how many total residents live?

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as 80

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(d) 7%

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Keya Aar 08/06/2023

Recognized under Sections 2(f) & 12(B) of the UGC Act. 1956 Post Office - Polba, District - Hooghly, West Bengal, Pin - 712148 **AFFILIATED TO THE UNIVERSITY OF BURDWAN** NAAC Accredited

Certificate of Participation

This is to certify that

from 23rd May 2023 to 08th June 2023, and obtained Grade A+ Department of Mathematics and IQAC, Polba Mahavidyalaya, Polba, Hooghly-712148, Course on "Basic Mathematics for Competitive Examinations" organized by the Ms. Isha Das, a student of 4th semester, B.Sc. General, has participated in the Add-on

Amrita Das

Course Co-Ordinator & HOD,

Department of Mathematics

Santanu Senau

(Santanu Sengupta)
IQAC Co-Ordinator

Akulanta

(Narugopal Kaibarta) Teacher-in-charge

John John

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AFFILIATED TO THE UNIVERSITY OF BURDWAN NAAC Accredited

Certificate of Participation

This is to certify that

Course on "Basic Mathematics for Competitive Examinations" organized by the Ms. Keya Das, a student of 4th semester, B.Sc. General, has participated in the Add-on Department of Mathematics and IQAC, Polba Mahavidyalaya, Polba, Hooghly-712148, from 23rd May 2023 to 08th June 2023, and obtained Grade A+

Junile Don.

(Amrita Das)

Course Co-Ordinator & HOD, Department of Mathematics

> IQAC Co-Ordinator (Santanu Sengupta)

Whilesto

(Narugopal Kaibarta) Teacher-in-charge



Recognized under Sections 2(f) & 12(B) of the UGC Act. 1956 AFFILIATED TO THE UNIVERSITY OF BURDWAN Post Office - Polba, District - Hooghly, West Bengal, Pin - 712148 **NAAC** Accredited

Certificate of Participation

This is to certify that

on Course on "Basic Mathematics for Competitive Examinations" organized by the Mr. Prantik Dutta, a student of 2nd semester, B.Sc. General, has participated in the Addfrom 23rd May 2023 to 08th June 2023, and obtained Grade A+ Department of Mathematics and IQAC, Polba Mahavidyalaya, Polba, Hooghly-712148,

Amile Dar.

(Amrita Das)

Course Co-Ordinator & HOD, Department of Mathematics

(Santanu Sengupta) IQAC Co-Ordinator

(Narugopal Kaibarta)

(Keiberte

Teacher-in-charge

$\frac{\textbf{Glipmses of Add on course on BASIC MATHEMATICS FOR COMPETITIVE}}{\underline{\textbf{EXAMINATIONS}}}$













