2.5 Evaluation Process and Reforms

2.5.1 Mechanism of internal assessment is transparent and robust in terms of frequency and mode

- **Academic Calender**

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA

K.T.R. Marg, Panchpaoli, NAGPUR

EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

Proposed plan for Session 2023-2024

S. N.	Months	Activity
1	June 2023	• Preparation of Practical Question Paper • RTMNU Practical/ Theory Exam Summer -2023 • New Academic session Starts
2	July 2023	• RTMNU Practical/ Theory Exam Summer -2023 • Result analysis Summer -2023
3	August 2023	• Unit Test for Regular students(Mapping of COs) • M.Com/B.Com/ BBA/ B. Sc/M.Sc. Result Analysis subject wise Summer -2023
4	September 2023	• Unit Test for Regular students (Mapping of COs) • College -Result Analysis Final year by EEC
5	October 2023	• Unit Test for Regular students(Mapping of COs) • Preparation of Practical / Theory Question Paper[Winter 2023] • Term Examination of M.Com/M.Sc./B.Com/ BBA/ B.Sc [Winter 2023] • Assign Internal Assessment [Winter 2023]
	Diwali vacation 1st Nov. 2023 upto 30th Nov. 2023	
6	November 2023	•
7	December 2023	• Unit Test for Regular students(Mapping of COs) • B.Com/ BBA/ M.com Viva • Preparation of Practical / Theory Question Paper[Winter 2023] • RTMNU Practical exam
8	January 2024	• RTMNU Theory college Exam • Preparation of Practical / Theory Question Paper[Winter 2023] • RTMNU Practical college Exam [Winter 2023]
9	February 2024	• Unit Test for Regular (Even Semester) students(Mapping of COs) • Result Analysis subject wise M.Com/M.Sc./B.Com/ BBA/ B.Sc [Winter 2023] (Departmental level) [Winter 2023] • Result Analysis subject wise M.Com (NEP)/M.Sc. (NEP)[W-2023]

Dr. Vijaya Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA

K.T.R. Marg, Panchpaoli, NAGPUR

EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

10	March 2024	• Unit Test for Regular (Even Semester) students(Mapping of COs) • College result analysis of final year by EEC • Assign Internal Assessment [Summer- 2024]
11	April 2024	• Preparation of Practical / Theory Question Paper[Summer 2023] • Unit Test for Regular M.Com/M.Sc./B.Com/ BBA/ B. Sc (Even Semester) students (Mapping of COs) • Grade Examination of Environmental studies summer 2024 • Term Examination of M.Com/M.Sc/B.Com/ BBA/ B. Sc [Summer 2024]
12	May 2024	• RTMNU Practical Exam Summer 2024 • RTMNU Exam Summer 2024
Summer Vacation (1st May 2024 to 15th June 2024)		

Co-cordinator
Dr. Mrs. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Principal

Scanned with CamScanner

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

- **Examination and Evaluation Committee**

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,
Panchpaoli, NAGPUR
EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

Following are the members of committee members of Examination and Evaluation Committee (2023-2024)

Incharge : Dr. Mrs. Sujata Mankar

Member: 1) Dr. Mrs. Rashi Vaswani

2) Dr Mrs. Trupti Sakhare

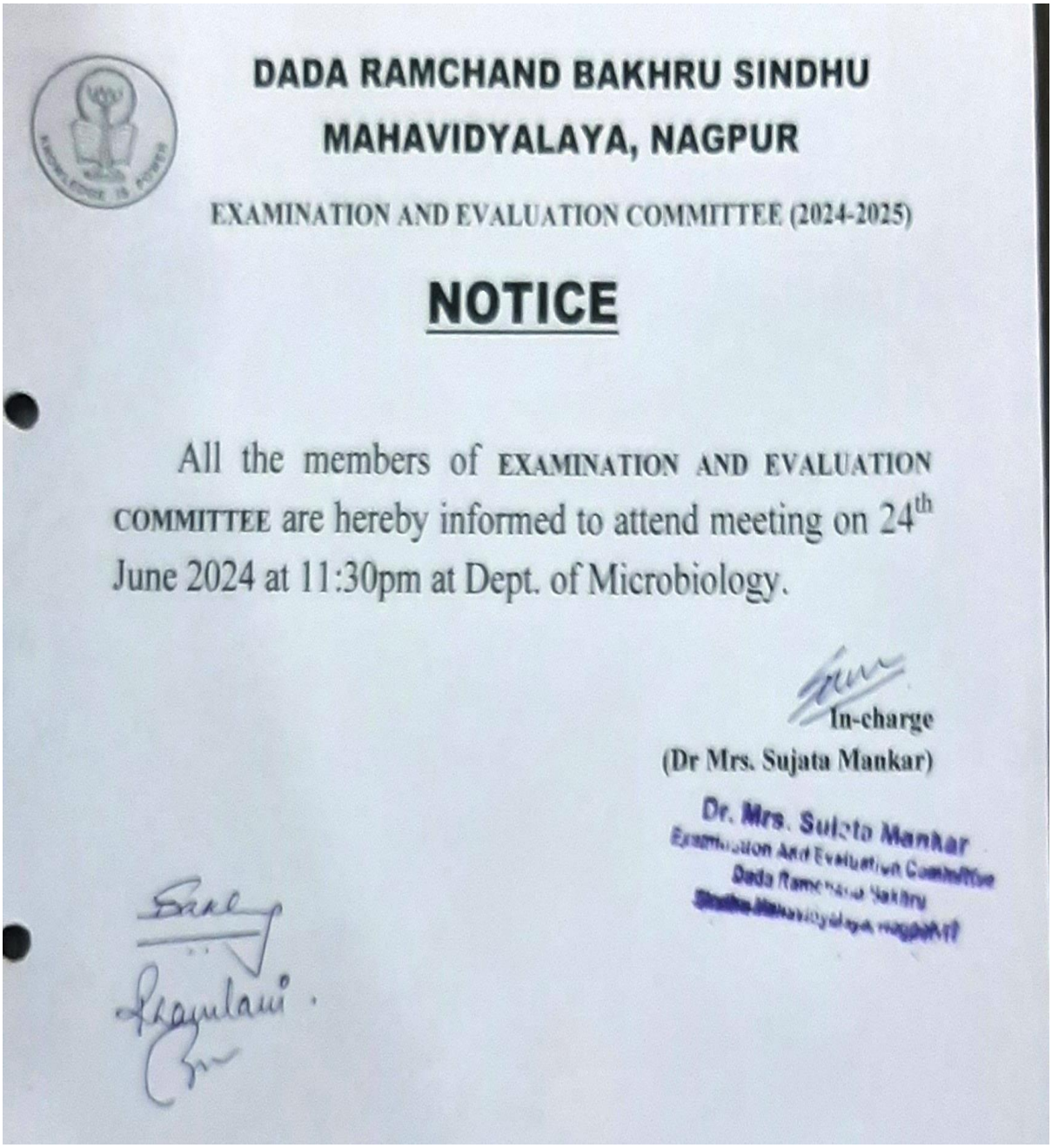
3) Dr. Avish Patil

Email ID : **smvexam_iqac@rediffmail.com**

Principal

Dr. Mrs. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

- **Examination and Evaluation Committee Notices**



DADA RAMCHAND BAKHRU SINDHU
MAHAVIDYALAYA, NAGPUR

EXAMINATION AND EVALUATION COMMITTEE (2024-2025)

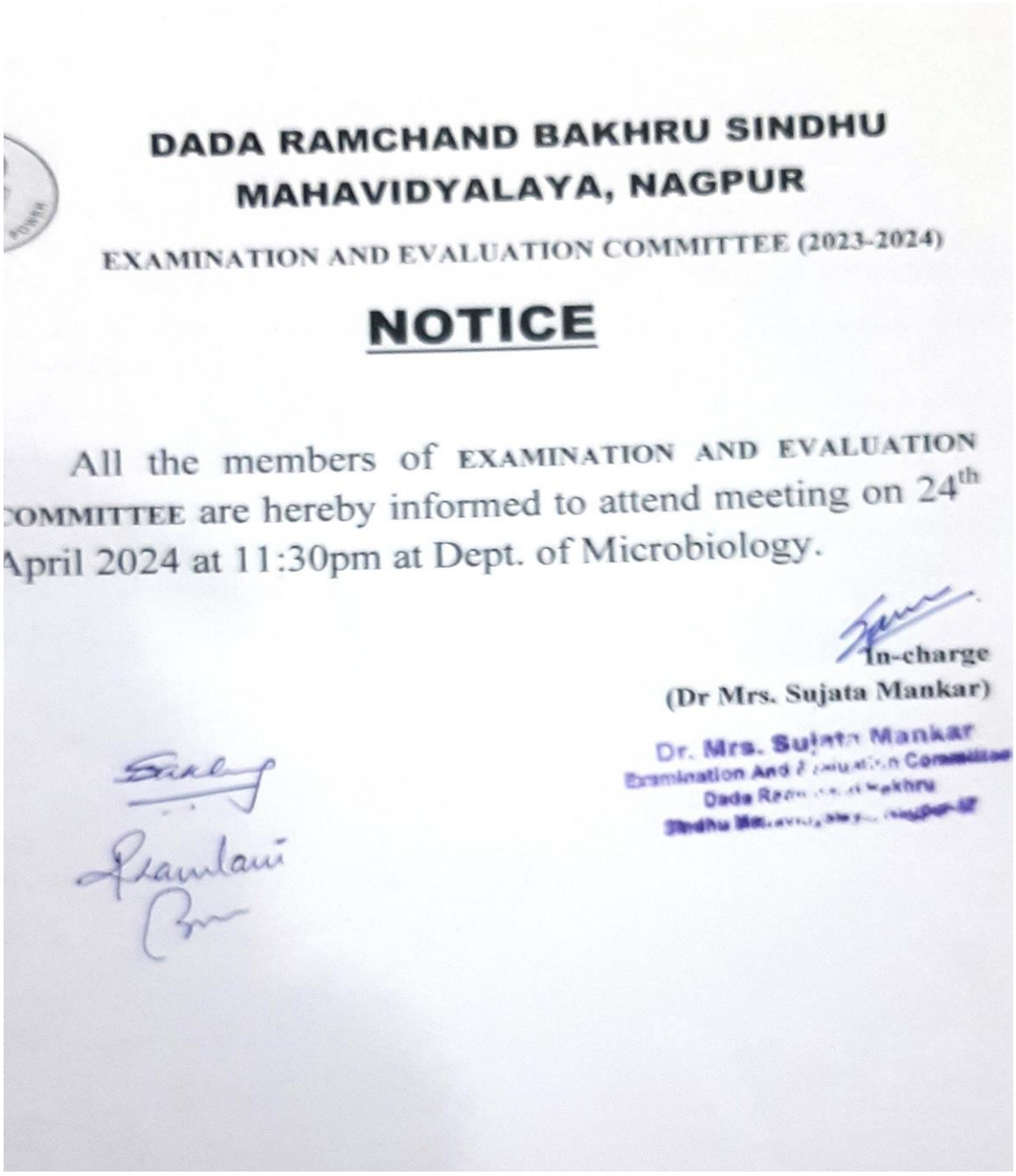
NOTICE

All the members of EXAMINATION AND EVALUATION COMMITTEE are hereby informed to attend meeting on 24th June 2024 at 11:30pm at Dept. of Microbiology.

In-charge
(Dr Mrs. Sujata Mankar)

Dr. Mrs. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17



DADA RAMCHAND BAKHRU SINDHU
MAHAVIDYALAYA, NAGPUR

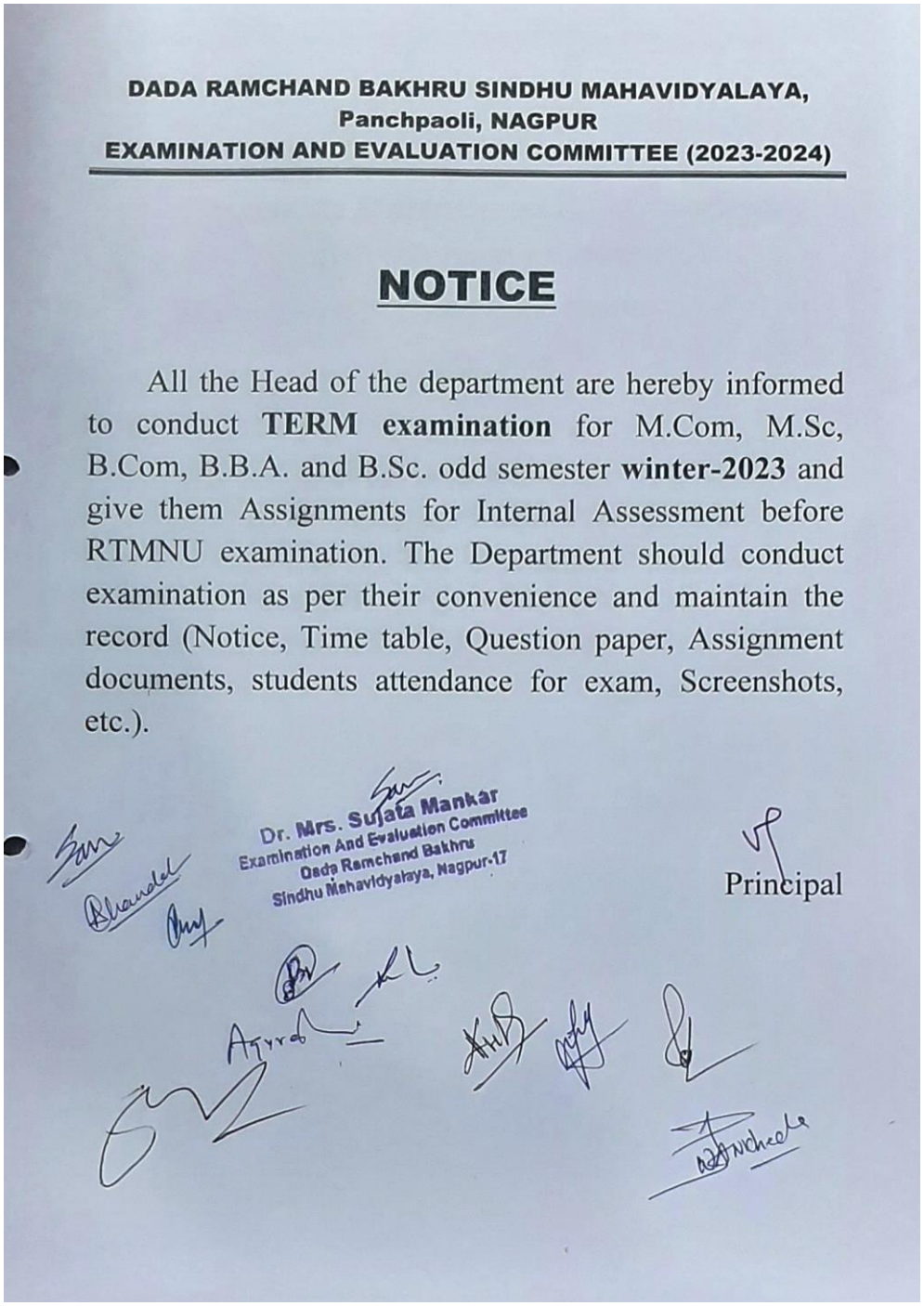
EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

NOTICE

All the members of EXAMINATION AND EVALUATION COMMITTEE are hereby informed to attend meeting on 24th April 2024 at 11:30pm at Dept. of Microbiology.

In-charge
(Dr Mrs. Sujata Mankar)

Dr. Mrs. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17



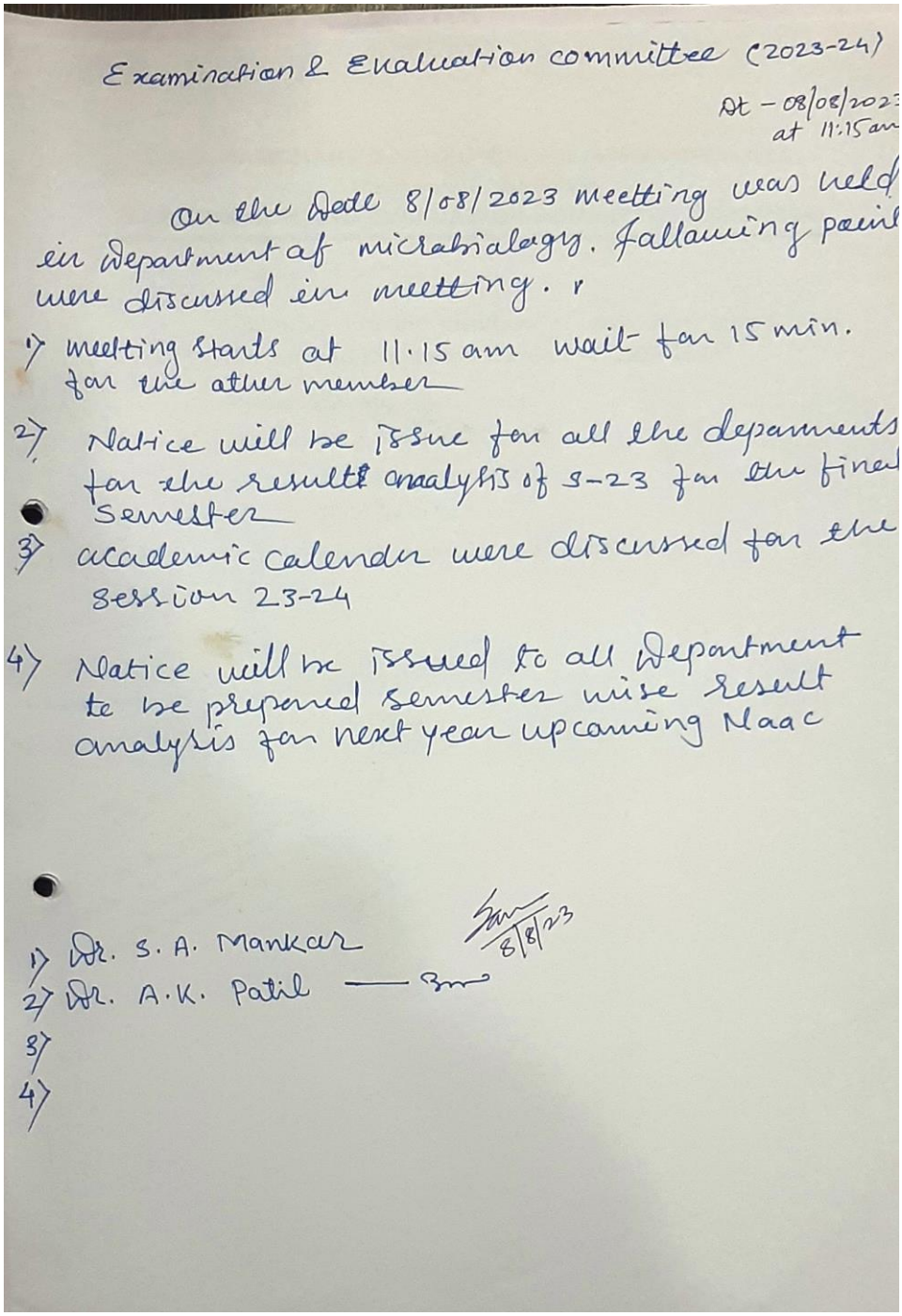
DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,
Panchpaoli, NAGPUR
EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

NOTICE

All the Head of the department are hereby informed to conduct **TERM examination** for M.Com, M.Sc, B.Com, B.B.A. and B.Sc. odd semester **winter-2023** and give them Assignments for Internal Assessment before RTMNU examination. The Department should conduct examination as per their convenience and maintain the record (Notice, Time table, Question paper, Assignment documents, students attendance for exam, Screenshots, etc.).

Dr. Mrs. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Principal



Examination & Evaluation committee (2023-24)

Dt - 08/08/2023
at 11:15 am

On the Dede 8/08/2023 meetting was held ein department af micrabialagy. Fallaming paint were discussed ein meetting. r

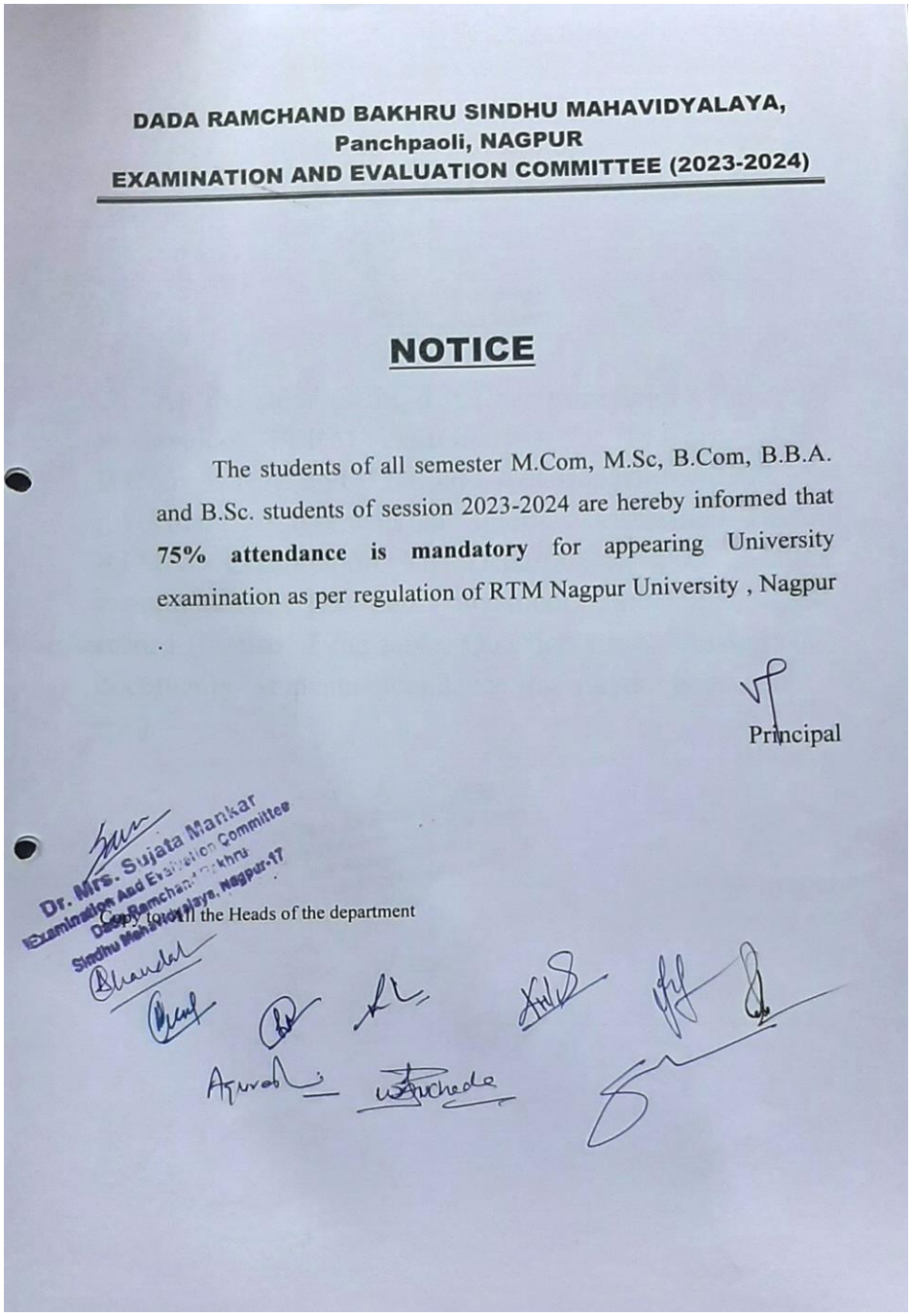
1) meetting starts at 11.15 am wait far 15 min. far the ather member

2) Natice will be issue far all the depaments far the results analysis of 3-23 far the final Semester

3) academic calendar were discussed far the session 23-24

4) Natice will be issued to all Depantment te be prepared semester wise result analysis far next year upcaming Naac

1) Dr. S. A. Mankar 8/8/23
2) Dr. A.K. Patil
3)
4)



DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,
Panchpaoli, NAGPUR
EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

NOTICE

The students of all semester M.Com, M.Sc, B.Com, B.B.A. and B.Sc. students of session 2023-2024 are hereby informed that **75% attendance is mandatory** for appearing University examination as per regulation of RTM Nagpur University , Nagpur

.

Principal

Dr. Mrs. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Copy to all the Heads of the department

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,
Panchpaoli, NAGPUR
EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

Continuous Internal Evaluation (2023-2024)

All the heads of the Department are hereby inform to submit the following information / data for the Session 2023-2024 on or before 28th April 2024

- **Time-table & Notice** - Unit test / Prelims exam / Internal Assessments (Winter 2023 & Summer 2024)
- Notices of internal exam (Session 2023-24)
- Notices & allotment list of students – ppt presentation/ Viva-Voce/Project/ Seminar
- Question papers of Unit test/ Mock test/ Open book test/ online test (Kindly mention Course outcomes -COs)
- Question papers of Term exam and notices (Winter 2023 & summer 2024)
-

Principal

Dr. Mrs. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Copy to: All the Heads of the department

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,
Panchpaoli, NAGPUR
EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

All the Department are hereby informed to prepare Semester wise Term Exam of M.Sc, M.Com , B.Com, B.B.A., B.Sc at department level and as per their convenience for summer 2024 end of the session examination .

Department	Email ID	Signature
Biochemistry	drbsmubiochemistry@gmail.com	
Biotechnology	dada.spforever@gmail.com	
Botany	dr.khapekar@gmail.com	
B.B.A	pranaywawhede22@gmail.com	
Chemistry	susmitamandavgane@gmail.com	
Commerce		
Computer Science	arow.kiran@gmail.com	
Electronics		
English	profleena bc@yahoo.com	
Hindi		
Physics	deore.sudhir30@gmail.com	
Mathematics	qaq_maths@yahoo.com	
Microbiology	amitamchandak@gmail.com	
Zoology		

Principal

Copy to: All the Heads of the department

Dr. Mrs. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

D.R.B. SINDHU MAHAVIDYALAYA NAGPUR

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,
Panchpaoli, NAGPUR
EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

NOTICE

All the Department are hereby informed to prepare Semester wise Result Analysis of M.Sc, M.Com , B.Com, B.B.A., B.Sc for session 2023-24 examination as per following format.

Department	Email ID	Signature
Biochemistry	drbsmubiochemistry@gmail.com	
Biotechnology	sharda.spforever@gmail.com	
Botany	dr.khapekar@gmail.com	
B.B.A	Pranaywankhede22@gmail.com	
Chemistry	~~Dr.~~ sumitamandavgane@gmail.com	
Commerce		
Computer Science	arow.kiran@gmail.com	
Electronics		
English	profleenabc@yahoo.com	
Hindi		
Physics	dange.sudhir30@gmail.com	
Mathematics	aaq-maths@yahoo.com	
Microbiology	anitamchandak@gmail.com	
Zoology		

Dr. Mrs. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Principal

Copy to: All the Heads of the department

~~NOTICE~~

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,
Panchpaoli, NAGPUR
EXAMINATION AND EVALUATION COMMITTEE (2023-2024)

NOTICE

All the Head of the department are hereby informed to prepare Question banks as per **Examination Pattern & Marking system (Session 2023-2024)** for M.Com, M.Sc, B.Com, B.B.A. and B.Sc. students (Sem I, III & V) Winter 2023. The Department should conduct examination as per their convenience and maintain the record (Notice, soft/hard copy, Question paper, Assignment documents, students attendance, Screenshots, etc.).

Principal

Dr. Ms. Sujata Mankar
Examination And Evaluation Committee
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Copy to: All the Heads of the department

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

Continuous Internal Evaluation

at the Institutional level

- Examination and Evaluation Committee for CIE
- Scheduled for Internal Examination
- 75% attendance is mandatory for appearing in the University Examination
- Unit test
- Contact Hours
- Parent -Teacher Meeting
- Mentor-Mentee Programme helps to improve academic performance of the students
- Projects on Environmental Studies
- Environmental Studies (EVS) Examination
- Internal Assignment
- Home Assignment
- Viva-voce
- Projects for B.B.A. and M.Com. Students
- Prelim Examination
- University Practical Examination

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR

PG Department of Botany

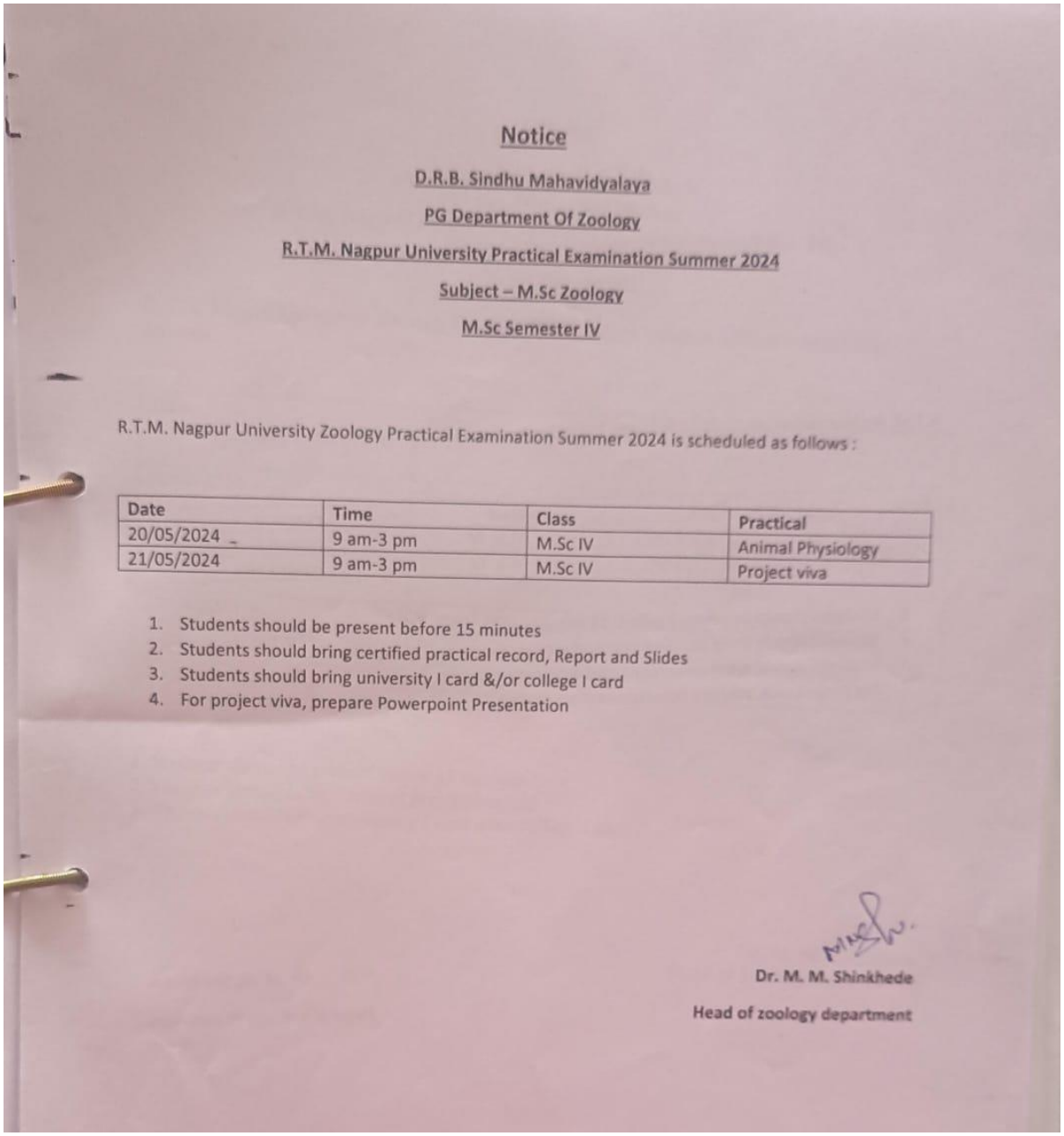
Session: 2023-2024

M.Sc - Semester IV

Seminar Topics

Sr. No	Student	Date	Topic
01	Ayush Bairam	19/01/24	Molecular markers in detail.
02	Harish Melchetwar	19/01/24	DNA fingerprinting and marker assisted breeding
03	Payal Banothe	19/01/24	Plant Breeding in detail
04	Pranali Nitnaware	19/01/24	Translation in prokaryotic and eukaryotic cells.
05	Rashmi Pente	19/01/24	Transgenic and molecular farming in detail.
06	Shabnam Mohare	19/01/24	Regulation of gene expression in eukaryotes in detail.

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17



Notice

D.R.B. Sindhu Mahavidyalaya

PG Department Of Zoology

R.T.M. Nagpur University Practical Examination Summer 2024

Subject – M.Sc Zoology

M.Sc Semester IV

R.T.M. Nagpur University Zoology Practical Examination Summer 2024 is scheduled as follows :

Date	Time	Class	Practical
20/05/2024	9 am-3 pm	M.Sc IV	Animal Physiology
21/05/2024	9 am-3 pm	M.Sc IV	Project viva

1. Students should be present before 15 minutes
2. Students should bring certified practical record, Report and Slides
3. Students should bring university I card &/or college I card
4. For project viva, prepare Powerpoint Presentation

Dr. M. M. Shinkhede

Head of zoology department

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur
Department of Zoology
Session 2023-24
M. Sc. Sem. I
Unit Test
Paper-I, Structure and function of Invertebrates

Unit - I and Unit II

Time: 60 min Max. Marks: 20

Q. 1	Give Comparative account of Coelenterata & Ctenophora: Structure & Reproduction	16M	CO4
	OR		
	Write short note on		
i)	Recent trends in biosystematics: Chemotaxonomy, Cytotaxonomy & Molecular taxonomy.	08 M	CO1
ii)	Canal system in sponges.	08 M	CO3
Q.2	Write in brief the following :		
	Spicules	04 M	CO3

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR

DEPARTMENT OF ZOOLOGY

SESSION 2023-24

UNIT TEST (SEM. V Paper II Unit II)

Time -45 min | Max. Marks-15

Semester V Paper II - Applied Zoology I (Aquaculture and Economic Entomology)

Unit II

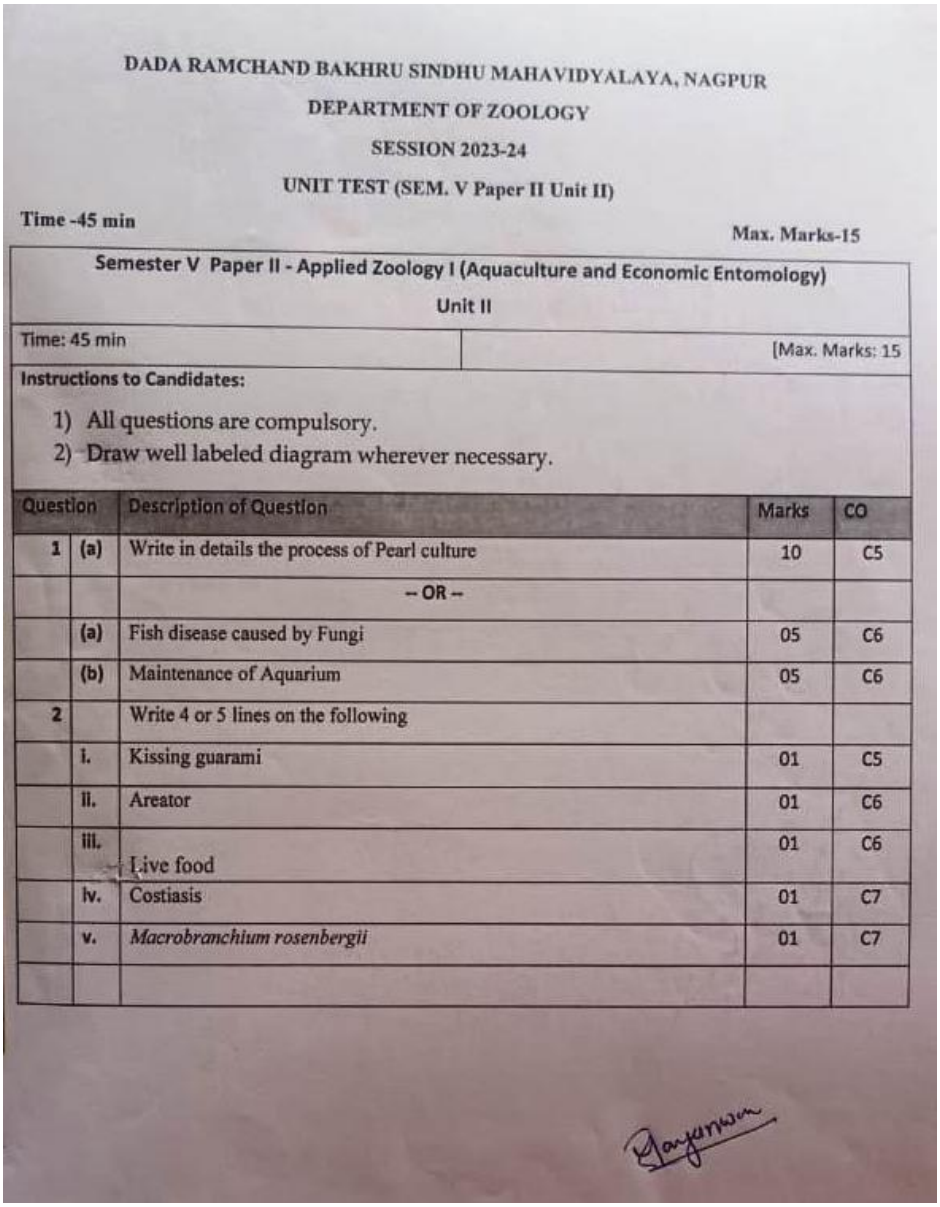
Time: 45 min | [Max. Marks: 15

Instructions to Candidates:

1) All questions are compulsory.
2) Draw well labeled diagram wherever necessary.

Question		Description of Question	Marks	CO
1	(a)	Write in details the process of Pearl culture	10	C5
		-- OR --		
	(a)	Fish disease caused by Fungi	05	C6
	(b)	Maintenance of Aquarium	05	C6
2		Write 4 or 5 lines on the following		
	i.	Kissing guarami	01	C5
	ii.	Areator	01	C6
	iii.	Live food	01	C6
	iv.	Costiasis	01	C7
	v.	*Macrobranchium rosenbergii*	01	C7

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17



DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR

DEPARTMENT OF ZOOLOGY

SESSION 2023-24

UNIT TEST (SEM. V Paper II Unit II)

Time -45 min

Max. Marks-15

Semester V Paper II - Applied Zoology I (Aquaculture and Economic Entomology)

Unit II

Time: 45 min | [Max. Marks: 15

Instructions to Candidates:

1) All questions are compulsory.
2) Draw well labeled diagram wherever necessary.

Question		Description of Question	Marks	CO
1	(a)	Write in details the process of Pearl culture	10	C5
		-- OR --		
	(a)	Fish disease caused by Fungi	05	C6
	(b)	Maintenance of Aquarium	05	C6
2		Write 4 or 5 lines on the following		
	i.	Kissing guarami	01	C5
	ii.	Areator	01	C6
	iii.	Live food	01	C6
	iv.	Costiasis	01	C7
	v.	*Macrobranchium rosenbergii*	01	C7

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA
DEPARTMENT OF MICROBIOLOGY

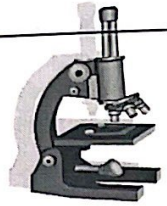
NOTICE

All the B.Sc Sem 2, 4 & 6 Students are hereby inform that Microbiology Term exam (summer 2024) is scheduled according to time table given below -

MB Paper 1	27/4/24 Saturday	Sem 2 9:00- 12.00 pm
		Sem 4 9:00-12:00 pm
		Sem 6 9:00-12:00 p.m
MB Paper 2	29/4/24 Monday	Sem 2 9:00-12:00
		Sem 4 9:00-12:00
		Sem 6 9:00-12:00
Practical Record Certificate signing date	22/4/24 Monday	Sem 2, 4 & 6

20/04/2024

D.R.B. Sindhu Mahavidhyalaya
Department of Microbiology



ASSIGNMENT for **B.Sc. SEMESTER- I (MICROBIOLOGY) Winter-2023**

Paper- II BASIC TECHNIQUES IN MICROBIOLOGY

1. Define numerical aperture.
2. Give any one application of fluorescent microscopy.
3. Give one application of dark field microscopy.
4. Name any two oil is used with oil immersion lens?
5. What is Phase contrast microscopy?
6. Give applications of dark-field microscopy.
7. Difference between of TEM and SEM.
8. Write application of fluorescent microscope.
9. Draw a well labelled diagram of fluorescent microscope
10. What is Abbe condensor?
11. Give any two application of phase contrast microscopy.
12. Define acidic and basic dyes.
13. Name the stain used in negative staining of capsule.
14. Define auxochrome.
15. Define Chromogen.
16. Give examples of basic stain.
17. Define chromophore group.
18. What is negative staining?
19. Name the stain used for endospore staining.
20. What is the significance of replica plate technique?
21. What is the major disadvantage of direct method of cell counting?
22. Differentiate sanitizer and disinfectant.
23. What do you mean by "total count" in measurement of growth?
24. Define microbiostatic condition.
25. What is CFU?
26. Which halide is frequently used as antimicrobial agent?
27. Name any two special media used for isolation of pure culture.
28. Name any two methods for cell mass determination.
29. Name any two National collection centers for preservation of microorganisms.
30. Given any two examples of chemotherapeutic agents.
31. What is fumigation?
32. What do you mean by "Master plate" in replica plating technique?
33. Define cationic detergents
34. Name any two gaseous sterilizing agents.
35. What is oligodynamic action?
36. What is laminar air flow method?
37. Give the mechanism of U.V rays as a means of microbial control.
38. Write different mode of Antimicrobial Activity.
39. Enlist actions of Microbial Control Agents.
40. How penicillin bring about injury to bacterial cells.

Submit On 25th October, 2023

Solve all questions. Each answer should be in short paragraph

Draw diagram according to question

Front page - White colored A4 size with given Format

--H. O. D., Department of Microbiology

Department of Microbiology,
D.R.B. Sindhu Mahavidhyalaya

FINAL ASSIGNMENT (IA) for B.Sc. SEMESTER-VI (MICROBIOLOGY)
Session (2023 – 2024)

PAPER – II: MICROBIAL BIOTECHNOLOGY & RECOMBINANT DNA TECHNOLOGY

1. (A) Discuss in detail about different methods used for selection of recombinants.

OR

(B)Give a detailed account of PCR and its applications.

2. (A) Describe in detail production of Salk polio vaccine.

OR

(B)Describe the process of production of monoclonal antibody and give its applications.

3. (A). What is meant by Oriental Fermented food and Discuss production of soya sauce?

OR

(B) Describe briefly method used for induction of protoplast fusion and its significance in agriculture biotechnology.

4. (A) Describe characteristic features and Discuss different types of biosensors.

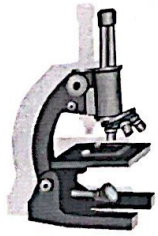
OR

(B) Discuss Production of amylase by deep tank & SSF method.

5. Solve any **ten** questions:
(i) What are restriction endonucleases?
(ii) What is YAC?
(iii) What is blunt end ligation?
(iv) What is interferon?
(v) What are edible vaccines?
(vi) What is ATS?
(vii) What is the significance of golden rice?
(ix) Give one example of biopesticides.
(x) Define uses of immobilized enzymes.
(xi) What is biochip?
(xii) Enlist hazards of biotechnology.

- ✓ **Submit On 6th April, 2024**
- ✓ **All questions are compulsory.**
- ✓ **Draw diagram according to question**
- ✓ **Front page - Green colored A4 size with given Format**
- ✓ *** Assignments will not be accepted after due date , strictly.**

Department of Microbiology,
D.R.B. Sindhu Mahavidhyalaya



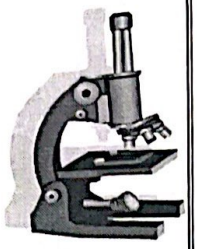
FINAL ASSIGNMENT (IA) for B.Sc. SEMESTER-IV (MICROBIOLOGY) Session (2023 – 2024)

PAPER – I: Metabolism

Unit 1	1.	Explain Pentose –phosphate pathways in Detail.
	2.	Describe in detail EMP pathway and its regulation.
	3.	Explain TCA cycle in detail.
Unit 2	4.	Give detail of different mode of replication of DNA.
	5.	Describe in detail of Prokaryotic transcription.
Unit 3	6.	Explain genetic code in detail.
	7.	Explain the deamination process of alanine, tyrosine and Methionine?
	8.	Explain Prokaryotic translation in detail?
Unit 4	9.	Describe oxidative phosphorylation in detail?
	10.	What are high energy molecules? Explain ATP generation?
	11.	Explain cyclic and non-cyclic photophosphorylation.
	12.	Explain Substrate level phosphorylation with suitable examples.

- ✓ Submit On 6th April, 2024
- ✓ Write any two questions per Unit compulsory.
- ✓ Draw diagram according to question
- ✓ Front page - Orange colored A4 size with given Format
- ✓ * Assignments will not be accepted after due date , strictly.

D.R.B. Sindhu Mahavidyalaya
Department of Microbiology



ASSIGNMENT for B.Sc. SEMESTER- III (MICROBIOLOGY) Winter-2023

Paper I – Chemistry of Organic Constituents

Unit 1	Discuss classification of Carbohydrate
1	Discuss classification of Lipids
2	Structure of triglycerides, phospholipids, Sphingolipids, cholesterol
3	Structure of Starch, Sucrose, Maltose, Lactose
Unit -2	
1	Describe in detail the secondary structure of proteins.
2	Discuss the classification of amino acids.
3	Describe in detail the tertiary structure of proteins.
Unit 3	
1	Describe in detail the different types of enzyme inhibition
2	Derive Michaelis and Menten equation and explain LB plot
3	Discuss any two Multi enzyme complex in detail
Unit 4	
1	What is vitamin? Describe water soluble vitamin in detail.
2	What is vitamin? Describe Fat soluble vitamin in detail.
3	What is RNA? Discuss different types of RNA.
4	What is DNA? Discuss different types of DNA.

- ✓ Submit On 25th October, 2023
- ✓ Solve ANY TWO question from each unit
- ✓ Draw diagram according to question

Front page - Orange colored A4 size with given Format

--H. O. D., Department of Microbiology

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA
DEPARTMENT OF MICROBIOLOGY

NOTICE

All the B.Sc Sem 1, 3 & 5 Students are hereby inform that there Microbiology Term exam (Winter 2023) is scheduled according to time table given below -

MB Paper 1	28/10/23 Saturday	Sem 1 1:30- 3:30 pm
		Sem 3 9:30-12:30 pm
		Sem 5 9:30-12:30
MB Paper 2	30/10/23 Monday	Sem 1 9:30-12:30
		Sem 3 9:30-12:30
		Sem 5 9:30-12:30
Final Record Checking	27th & 28th October	Sem 1, 3 & 5
Internal Assignment submission	25/ 10/ 2023	Sem 1, 3 & 5

06/10/2023

(Dr. Mrs. S. A. Mankar)
Head Dept. of Microbiology
D.R.B. Sindhu Mahavidyalaya,
Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR
DEPARTMENT OF MICROBIOLOGY
TERM EXAM
B.Sc Semester VI (2023-2024)
MICROBIOLOGY PAPER I IMMUNOLOGY

Q1. Describe the general structure of immunoglobulin . Give function of various classes of immunoglobulins. 10M

OR

Define antigen. Describe antigens in relation to human beings. 10M

Q2. What are tagged antibodies? Enlist them . Describe direct and Indirect ELISA. 10M

OR

Define hypersensitivity. Describe type I and type IV hypersensitive reactions. 10M

Q3. a)Describe first line of defense 5M

b)Describe Phagocytosis 5M

OR

c)Describe Lymph node 5M

d)Explain the mechanism of inflammation 5M

Q4.

a)Write a note on Macrophage

b)What are natural killer cells? Give their mechanism of action.

c)Add a note on secondary immune response.

d)What are cytokines? Describe in brief any cytokine (2.5x4)

OR

e)Diagrammatically represent the structure of MHC I and MHC IImolecules.

f)Write a note on T- cells

g)Explain the mechanism of T-cell independent antibodyresponse.

h)Write a note on dendritic cells (2.5 x 4)

Q 5 : Solve any ten 10M

a) What is MALT?

b) Enlist any two types of Interferons

c) What is innate immunity?

d) What is Haematopoiesis?

e) What are mast cells?

f) What are TCR?

g) Define Hapten

h) Define Rising Antibody Titre

i) What is haemagglutination inhibition test?

j) What is Rh factor?

k) What is serum sickness?

l) What is erythroblastosis feotalis?

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR

DEPARTMENT OF MICROBIOLOGY

TERM EXAM B.Sc Semester II (2023-2024)

MICROBIOLOGY PAPER II FOOD MICROBIOLOGY

Q1. Write and detail account on sources of microorganism in food 10M

OR

Q2. Decribe various factors and types responsible for microbial spoilage of fruits and vegetables 10M

Q.3 A)Describe canning in detail 10M

OR

B) Describe various food borne infections in detail 10M

Q4. Describe various methods of food preservation by using low temperature. 10M

OR

Define Pasteurization. Explain various types of pasteurization method.10M

Q.5)a Describe various food borne infections in detail 5M

b) Describe various food borne diseases 5M

OR

c). Explain Pasteurization 5M

d) Describe various methods of food preservation by using High temperature. 5M

Q5. a) write a note on classification of food on basis of ease of spoilage 2.5X4

b)Explain the Principle and procedure of MBRT test.

c) Discuss about HACCP.

d) Explain FSSAI- objectives and responsibilities

OR

e) What are aflatoxins and what is there effect on human health.

f)Write short note on production of curd

g) Write an account on classification of cheese

h) Write account on sources of microorganism in milk

Q5 . Solve any ten 10M

a)Define Black rot.

b) Define food borne disease, give its example.

c) Define food intoxication, give its example.

d) Name two meat spoilage organisms.

e) What is full form of 'GRAS' with respect to chemical preservatives used in the food.

f) Name the preservatives used in Jam and Jellies.

g) Define food intoxication

h) Give the names of any two chemical preservatives

i) Give temperature and time requirements of HTST pasteurization

j)What is meant by Appertization ?

k)Define Thermal death point ?

l)Give full form of HACCP.

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR
Master of Commerce (M.Com.) Semester–I (A&T)
Unit Test :I
Session 2023-2024
INDIAN FINANCIAL SYSTEMS

Time:1 Hour Max. Marks:20

CO1: Component of formal financial system

Q.1 Explain Functions of Financial system.	8
Q.2 Explain Nature and role of financial institutions.	8
Q.3 Write Short note on Treasury Bills	4

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Date:01/08/2023

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR

NOTICE FOR VIVA-VOCE EXAMINATION

2023-2024

M.Com 1st Year, Sem- 1

Business Studies/ Account and Taxation

All the students of M.Com I Year, Sem I (Business Studies) are informed that their Unit Test Exam 2023-24 will be held on 6/08/2023.

Timings: 8 am to 9:30 am

Location: M.Com Class Room (FF – 4)

HOD

Department of Commerce
Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Date:8/9/2023

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR

NOTICE FOR VIVA-VOCE EXAMINATION 2023-2024

M.Com 1st Year, Sem- I

Business Studies/ Account and Taxation

All the students of M.Com I Year, Sem I (Business Studies) are informed that their Unit Test Exam 2023-24 will be held on 18/09/2023.

Timings: 8 am to 9:30 am

Location: M.Com Class Room (FF – 4)

HOD
Department of Commerce
Dada Ramchand Bakhru Sindhu

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR

NOTICE FOR VIVA-VOCE EXAMINATION

2023-2024

M.Com 2nd Year, Sem- IV(CBCS)

All the students of M.Com II Year, Sem IV are informed that their Unit Test Exam 2023-24 will be held on 18/12/2023.

Timings: 8 am to 9:30 am

Location: M.Com Class Room (FF – 3)

HOD
Department of Commerce
Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR
Master of Commerce (M.Com.) Semester–I (A&T)
Unit Test :I
Session 2023-204
ADVANCE FINANCIAL ACCOUNTING

Time:1 Hour Max. Marks:20

CO1: Computer software Accounting

Q.1 Explain Statutory Books of Accounts. **8**

Q.2 A fire occurred in the godown of Prakash Co. Ltd., on 15th April, 2017 the books of accounts and stock amounting to Rs. 10,800 were saved. Company's average rate of Gross Profit is 33% on Sales. The stock on hand on 31st Dec., 2016 valued at 10% above cost was Rs. 58,300. Purchases, Wages and Sales were at Rs. 45,000; Rs. 18,000 and Rs. 95,400 respectively.

Prepare a statement of Claim. **8**

Q.3 Write Short note on Corporate Governance. **4**

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sidhu Mahavidyalaya
Panchpaoli Nagpur

Department of Management (BBA)
Session 2023-24

VIVA-VOCE TIME TABLE

Notice

Date: - 09/03/2024

This is to inform to all the students of BBA I, II and III that VIVA-VOCE has been scheduled from 27th march to 30th march 2024 In BBA department.

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

The time table for the same is as follows-

CLASS	DATE	TIME
BBA SEM II	27/03/2024	8:00am-10:00am
BBA SEM IV	28/03/2024	8:00am-10:00am
BBA SEM VI	30/03/2024	8:00am-10:00am

Regards

Dr. A G Thadani
In-Charge BBA
Dada Ramchand Bakhru Sindhu Mahavidyalaya

Dada Ramchand Bakhru Sindhu Mahavidyalaya
Panchpaoli Nagpur
Unit test 1
Department of Management (Session 2023-24)

Notice

Date: -18 /01/2024

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

All the students are informed that there will be Unit test 1 from 22/01/24 to 29/01/24 for BBA Sem II, IV and VI in their respective classrooms.

Date	Sem II	Sem IV	Sem VI
22/01/2024	English 2	FW	FMM/FBF/PHRM
23/01/2024	CA	FMM	AMM/AFM/AHRM
24/01/2024	H & T	FHRM	-
27/01/2024	FBM	FFM	-
29/01/2024	EVS	ISV&BE	-

Kindly note that it is compulsory for everyone to appear for the Exam

By Order

Dr. A G Thadani
In-Charge BBA
Dada Ramchand Bahkru Sindhu Mahavidyalaya

Dada Ramchand Bakhru Sindhu Mahavidyalaya
Panchpaoli Nagpur
Unit test 1 (odd sem)
Department of Management
Session 2023-24

Notice

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Date: - 18/08/2023

All the students are informed that there will be Unit test 1 from 21/08/23 to 25/08/23 for BBA Sem I, III and V in their respective classrooms.

Date	Sem II	Sem IV	Sem VI
01/04/2024	English 2	FW	FMM/FBF/PHRM
02/04/2024	CA	FMM	AMM/AFM/AHRM
03/04/2024	H & T	FHRM	-
04/04/2024	FBM	FFM	-
05/04/2024	EVS	ISV&BE	-

Kindly note that it is compulsory for everyone to appear for the Exam

By Order
Dr. A G Thadani
In-Charge BBA
Dada Ramchand Bahkru Sindhu Mahavidyalaya

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR
SESSION 2023-24
BBA FIRST SEMESTER
TERM EXAMINATION

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

SUBJECT: FOUNDATION OF MANAGERIAL EFFECTIVENESS

Time: 3Hrs **Max Marks: 80**Q1. Each question carry 2 marks each.

a) Types of Learning
b) Define Problem Solving
c) Innovation
d) What are different types of Skills?
e) Define Group
f) What are the advantages of team?
g) Explain the meaning of Empowerment.
h) What are informal organization.

Q2. Each question carry 3 marks each

a) What is learning? Explain its nature.
b) Explain types of Values.
c) What is problem solving? Explain the types of problem solving.
d) What is innovation? Write importance of innovation in organization.
e) Define Team? Explain its Characteristics.
f) What are the types of group. Explain.
g) What is environmental analysis. Write its limitations.
h) Explain delegation of work.

Q3.

A. What is organizational change. Explain its level. (5)
B. Explain types of change. (5)

Or

C. What is management. Explain its characteristics. (10)

Q4.

A. Explain Johari Window in details. (5)
B. Difference between creativity and innovation. (5)

Or

C. What is learning skills? How individuals improves their learning skills. (10)

Q5.

A. Explain the stages of group development. (5)
B. Difference between Group and Team. (5)

Or

C. Explain SWOT: A Technique of Diagnosis. (10)

Q6.

A. Explain the inhibitors of Empowerment. (5)
B. Explain the types of Matrix organization. (5)

Or

C. What are the five stages in organizational life cycle? Explain. (10)

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR
SESSION 2022-23
BBA FIRST SEMESTER
TERM EXAMINATION
SUBJECT: FUNDAMENTALS OF USINESS MANAGEMENT

Time: 3Hrs **Max Marks: 80**

Q1. Each question carry 2 marks each.

i) Types of Learning
j) Define Problem Solving
k) Innovation
l) What are different types of Skills?
m) Define Group
n) What are the advantages of team?
o) Explain the meaning of Empowerment.
p) What are informal organization.

Q2. Each question carry 3 marks each

i) What is learning? Explain its nature.
j) Explain types of Values.
k) What is problem solving? Explain the types of problem solving.
l) What is innovation? Write importance of innovation in organization.
m) Define Team? Explain its Characteristics.
n) What are the types of group. Explain.
o) What is environmental analysis. Write its limitations.
p) Explain delegation of work.

Q3.

D. What is organizational change. Explain its level. (5)
E. Explain types of change. (5)

Or

F. What is management. Explain its characteristics. (10)

Q4.

D. Explain Johari Window in details. (5)
E. Difference between creativity and innovation. (5)

Or

F. What is learning skills? How individuals improves their learning skills. (10)

Q5.

D. Explain the stages of group development. (5)
E. Difference between Group and Team. (5)

Or

F. Explain SWOT: A Technique of Diagnosis. (10)

Q6.

D. Explain the inhibitors of Empowerment. (5)
E. Explain the types of Matrix organization. (5)

Or

F. What are the five stages in organizational life cycle? Explain. (10)
G.

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR

Academic session 2023-24

B.Sc. Semester-II

UNIT TEST

PAPER - I (Geometry, differential and Difference Equation)

UNIT – I (Sphere, Cone and Cylinder)

Time: 50 min **Max. Marks: 15**

Q. 1	A sphere of radius K passes through the origin and meets the axes in A, B, C. Prove that the centroid of the triangle ABC lies on the sphere $9(x^2 + y^2 + z^2) = 4k^2$	6M	CO1
Q.2	Find the equation of sphere for which the circle $x^2 + y^2 + z^2 = 9, 2x + 3y + 4z = 5$ and the point (1,2,3).	6M	CO1
Q.3	Define right circular cone.	$1\,1/2$	CO1
Q.4	State the equation of right circular cone whose vertex is at origin, axes along X-axis and semi vertical angle is θ.	$1\,1/2$	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR
Academic session 2023-24
B.Sc. Semester-V
UNIT TEST II
PAPER - I (Complex Analysis)

UNIT – II (Conformal Transformation)

Time: 50 min **Max. Marks: 15**

Q.1	**Solve any two**		
A	Consider the transformation $w = ze^{i\pi/4}\sqrt{2}$. Determine the region R' of w-plane corresponding to the rectangular region R bounded by the lines $x = 0, y = 0, x = 2, y = 3$ in z-plane.	6M	CO1
B	Find the image of the infinite strip $0 < y < \frac{1}{2}$ under the mapping $= \frac{1}{z}$.	6M	CO1
C	Find the bilinear transformation that maps the points $z_1 = -i, z_2 = 0, z_3 = i$ into the points $w_1 = -1, w_2 = i, w_3 = 1$ respectively. Into what curve the y-axis is transfored to this transformation?	6M	CO1
Q.2	**Compulsory**		
A	Find the fixed point of the bilinear transformation $w = \frac{z}{2-z}$	$1\frac{1}{2}$	CO1
B	Define Schwarz-Christoffel Transformation..	$1\frac{1}{2}$	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR

Academic session 2023-24

B.Sc. Semester-V

UNIT TEST I

PAPER - I (Complex Analysis)

UNIT – I (Analytic Functions)

Time: 50 min **Max. Marks: 15**

Q.1	**Solve any two**		
A	Find the Values of of a and b such that the function $f(z) = x^2 + ay^2 - 2xy + i(bx^2 - y^2 + 2xy$ is analytic. Also find $f'(z)$.	6M	CO1
B	Show that $u = 2x - x^3 + 3xy^2$ is harmonic and determine its harmonic conjugate.	6M	CO1
C	Show that the function $u = x^3 - 3xy^2 + 3x^2 - 3y^2 + 1$ satisfies the Laplace's equation and determine the corresponding analytic function.	6M	CO1
Q.2	**Compulsory**		
A	Show that the function $f(z) = xy + iy$ is continuous everywhere but not analytic.	$1\frac{1}{2}$	CO1
B	State Cauchy-Riemann Equations.	$1\frac{1}{2}$	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru
Sindhu Mahavidhyalaya, Nagpur
A Premier Higher Education Linguistic Minority Institutes Run By Sindhi Hindi Vidya Samiti

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur
Bachelor of Science (B. Sc.) Semester- IV (New) Examination
MATHEMATICS
M8: MATHEMATICAL MATHOD
Optional paper II
Term Exam (2023-24)

[Time – 3 Hours] **[Maximum Marks – 60]**

N.B.:-- (1) Solve all the FIVE questions
(2) All questions carry equal marks
(3) Questions No. 1 to 4 have an alternative. Solve each questions in full or its alternative in full.
(4) Question No. 5 has no alternative and contain eight sub-questions.

UNIT I

1. (A) For the differential equation $x^2y' = y$, find a power series solution of the form $\sum a_n x^n$. 6

(B). Find the general solution of $(1 + x^2)y'' + 2xy' - 2y = 0$ in terms of power series in x. Can you express this solution by means of elementary functions? 6

OR

(C) Locate and classify its singular points on the X-axis for the differential equation $x^2(x^2 - 1)^2y'' - x(1 - x)y' + 2y = 0$ 6

(D) Find the indicial equation and its roots for the differential equation$x^3y'' + (\cos 2x - 1)y' + 2xy = 0$. 6

UNIT II

2. (A) Show that (i) $P_n = 1$ (ii) $P_n(-x) = (-1)^n P_n(x)$. Hence show that $P_n(-1) = (-1)^n$. 6

(B) Prove that $(1 - 2xh + h^2)^{\frac{-1}{2}} = \sum_{n=0}^{\infty} h^n P_n(x)$. 6

OR

(C) Prove that $\frac{d}{dx}[x^n J_n(x)] = x^n J_{n-1}(x)$ for any integer n. 6

(D) If λ_j and λ_k are roots of the equation $J_n(\lambda a) = 0$, then $\int_0^a x\, J_n(\lambda_j x)\, J_n(\lambda_k x)dx = 0$ when $j \neq k$. 6

UNIT III

3. (A) If $L[f(t)] = F(s)$, then prove that: $L\left[\int_0^t f(u)du\right] = \frac{F(s)}{s}$. Hence evaluate $L\left[\int_0^t e^{-u}\cos u\, du\right]$. 6

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

(B) Find $L^{-1}\left[\log\left(1+\frac{1}{s^2}\right)\right]$ 6

OR

(C) By using convolution theorem, evaluate $L^{-1}\left[\frac{1}{(s^2+9)^2}\right]$. 6

(D Solve $y''' + 2y'' - y' - 2y = 0$;given that $y(0) = y'(0) = 0$ and $y''(0) = 6$ by the method of Laplace Transform. 6

UNIT IV

4.(A) Find the Fourier series of the periodic function defined by

$f(x) = -\pi, \quad -\pi \le x < 0.$

$f(x) = x, \quad o \le x < \pi.$ 6

(B) Find Fourier cosine series of function f(x) = $\pi - x$ in the half range [0, π]. 6

OR

(C) Find the Fourier series expansion of the function f(x) = $|x|$, -1≤ $x \le 1$. 6

(D) Find the Fourier sine series for the function $f(x) = x^2$, 0≤ $x \le \pi$. 6

QUESTION - V

5. (A) Find the radius of convergence for the power series $\sum_{n=0}^{\infty} n!\ x^n$. **1½**

(B) Determine the nature of the point x = 0 for the differential equation $x^4y'' + (\sin x)y = 0$. **1½**

(C) Prove that: $x^2 = \frac{1}{3}P_0(x) + \frac{2}{3}P_2(x)$. **1½**

(D) Prove $\frac{d}{dx}J_0 = -J_1$ and $\frac{d}{dx}(xJ_1) = xJ_0$. **1½**

(E) Prove that $L\left[\frac{\sin t}{t}\right] = tan^{-1}\left(\frac{1}{s}\right)$. . **1½**

(F) State convolution theorem **1½**

(G) Find the Fourier coefficients a_0 for f(x) = x^2 in $-1 \le x \le 1$. **1½**

(H) Find the convergence of the periodic function f(x) = $-\pi$, $-\pi \le x < 0$ and f(x) = x, $0 \le x < \pi$ at the points of discontinuity x =π. **1½**

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

Bachelor of Science (B.Sc.) Semester – III

MATHEMATICS [Term Exam]

Paper – I : Partial Differential Equations & Calculus of Variations

Session: 2023-24

[Three Hours] **[Maximum Marks 60]**

UNIT- I

Q.1 (A) Verify that the differential equation $yz(y + z)\,dx + xz(x + z)dy + xy(x + y)\,dz = 0$ is integrable and find its solution.
6

(B) Find the integral curves of the equation $\frac{dx}{x+y} = \frac{dy}{x+y} = \frac{dz}{-(x+y+2z)}$.
6

OR

Q.1 (C) Verify the Pfaffian differential equation: $(y2 + z2)dx + xydy + xzdz = 0$ is integrable and solve it.
6

(D) Verify that the equation $z(z + y^2)\,dx + z(z + x^2)\,dy - xy\,(x + y)\,dz = 0$ is integrable and find its solution by Natani's Method.
6

UNIT-II

Q.2 (A) Find the general solution of the differential equation $x^2\frac{\partial z}{\partial x} + y^2\frac{\partial y}{\partial z} = (x + y)z$.
6

(B) Find the integral surface of the linear partial differential equation.

$(x - y)y^2p + (y - x)x^2\,q = (x^2 + y^2)z$ which pass through the curve $xz = a^3$, $y = 0$.
6

OR

Q.2 (C) Show that the equations : $xp - yq = x$ and $x^2p + q = xz$ are compatible and hence find their solution.
6

(D) Find the complete integral of the equation $p^2x + q^2y = z$ by Jacobi's method.
6

UNIT- III

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Q.3 (A) Solve $(2D^2 - DD' - 3D'^2)z = \cos(2x + y)$
6

(B) Solve $\frac{\partial^2 V}{\partial x^2} + \frac{\partial^2 V}{\partial y^2} = -4\pi(x^2 + y^2)$
6

OR

Q.3 (C) Solve $(D^2 + 2DD' + D'^2)z = 2y\cos x - x\sin y$
6

(D) Solve $(x^2 D^2 + 2xyDD' + y^2 D'^2 + yD' + xD - z)z = 0$
6

UNIT- IV

Q.4 (A) Prove Necessary condition for the functional $I[y(x)] = \int_{x_0}^{x_1} F(x, y, y')dx$ to be an extremum is $\frac{\partial F}{\partial y} - \frac{d}{dx}\left(\frac{\partial F}{\partial y'}\right) = 0$.
6

(B) Find the extremal of the functional $I[y(x)] = \int_0^1 (y^2 + x^2 y)dx$ with y(0) = 0, y(1) =a.
6

OR

Q.4 (C) Find the extremal of the functional $I[y(x)] = \int_0^{\pi} (y''^2 - 2y^2 + 2yz - z'^2)dx$, y(0)=0;
$z(0) = 0,\ y(\pi) = z(\pi) = 1.$
6

(D) Write Euler's – Ostrogradsky equation for the functional
$$I[z(x,y)] = \iint_D^0 \left[\left(\frac{\partial z}{\partial x}\right)^2 - \left(\frac{\partial z}{\partial y}\right)^2\right] dxdy$$
6

Question-V (Compulsory)

Q.5 (A) Form the partial differential equation if $ax^2 + y^2 + z^2 = 1$.
1½

(B) State the condition of integrability for Pfaffian DE $P(x,y)dx + Q(x,y)dy + R(z)dz = 0$.
1½

(C) verify that $p = P(x,y)$ and $q = Q(x,y)$ are compatible if $\frac{\partial P}{\partial y} = \frac{\partial Q}{\partial x}$.
1½

(D) Write the charpit's auxiliary equations for $xp + 3yq = 2(z - x^2q^2)$ where $p = \frac{\partial z}{\partial x}$ & $q = \frac{\partial z}{\partial y}$. **1½**

(E) Solve $r + t = 0$.
1½

(F) Solve $(D^2 + D'^2)z = 0$.
1½

(G) Find the distance between the curves $y_1(x) = xe^{-x}, y_2(x) = 0\ 0n\ [0,2]$.

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

1½

(H) Prove that if the functional F does not depends on y' then $\frac{\partial F}{\partial y} = 0$.

1½

****

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

Bachelor of Science (B.Sc.) Semester – III

MATHEMATICS [Term Exam]
Paper – II : Modern Algebra

Session: 2023-24

[Three Hours] **[Maximum Marks 60]**

N.B. : - (1) Solve all the **FIVE** questions.

(2) All questions carry equal marks.

(3) Question No. **1** to **4** have an alternative.

Solve each question in full or its alternative in full.

UNIT - I

1(A) Show that $G = \{1, -1, i, -i\}$ is an abelian group of order 4 with respect to binary operation multiplication. (6)

(B) Let U and W be subgroups of group G. Prove that U U W is a subgroup of G if and only if $U \subset W$ or $W \subset U$. (6)

OR

1(C) Define cyclic group and prove that every cyclic group is abelian. (6)

(D) If G is a finite group and H is a subgroup of G, then prove that (H) is a divisor of (G). (6)

UNIT - II

2(A) Let G be a group and N be subgroup of G. Prove that N is normal subgroup of G if and only if $gNg^{-1} = N, \ \forall g \epsilon G$. (6)

(B) Let G be a group of real numbers under '+' and $\overline{G}$ be a group of nonzero real numbers under multiplication $' \cdot '$ and $\emptyset : G \to \overline{G}$ be defined by $\emptyset(x) = 2^x, \forall x \epsilon G$. Show that $\emptyset$ is an isomorphism of G into G and find kernel of $\emptyset$.

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

2(C) Prove that a homomorphism $\emptyset$ of group G into G' with kernel $K_\emptyset$ is an isomorphism of group G into
G' if and only if $K_\emptyset = \{e\}$, where e is an identity in G. (6)

(D) Compute $a^{-1}ba$, where $a = (1\ 3\ 5)(1\ 2)$ and $b = (1\ 5\ 7\ 9)$. (6)

UNIT - III

3(A) Show that the set R_7 of integers $mod\ 7$ under addition and multiplication $mod\ 7$ is a commutative ring with unity. (6)

(B) Show that the commutative ring D is an integral domain if and only if for $a, b, c \in D$ with $a \neq 0$ the relation $ab = ac \Rightarrow b = c$. (6)

OR

3(C) If $\emptyset$ is a homomorphism of ring R into R' then prove that $(i)\ \emptyset(o) = o'$ and $(ii)\ \emptyset(-a) = -\emptyset(a)$, where o and o' are zeros of ring R and R' respectively. (6)

(D) If F is a field then prove that its only ideals are $\{0\}$ and F itself. (6)

UNIT - IV

4(A) Find the field of quotient of integral domain $Z[i] = \{a + ib/a, b \in Z\}$. (6)

(B) Show that Ring of integers is a Euclidean Ring. (6)

OR

4(C) Let R be a Euclidean ring and $a, b \in R$. If $b \neq 0$ is not a unit in R, then prove that $(a) < (ab)$. (6)

(D) If (x) and (x) are two nonzero elements of $[x]$, then prove that :

$deg(f(x) \cdot g(x)) = deg\ f(x) + deg\ g(x)$. (6)

Question - V

5(A) Let G be a group such that $a^{-1} = a, \forall a \in G$. Prove that G is abelian. $(1\frac{1}{2})$

(B) Let H be a subgroup of group G and $a, b \in G$. Prove that $Ha=Hb \Longrightarrow ab^{-1} \in H$. $(1\frac{1}{2})$

(C) $(Z_{even}, +)$ is a normal subgroup of group $(Z, +)$ of integers. Find the Factor group $Z - Z_{even}$. $(1\frac{1}{2})$

(D) Find whether a permutation $f = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 \\ 2 & 3 & 1 & 4 & 6 & 7 & 5 \end{pmatrix}$ is even or odd. $(1\frac{1}{2})$

(E) In a ring R with unity, prove that $a(-1) = (-1)a$, where $a \epsilon R$. $(1\frac{1}{2})$

(F) If U is an ideal of ring R and $1 \epsilon U$, then prove that $U = R$ $(1\frac{1}{2})$

(G) Define Euclidean Ring. $(1\frac{1}{2})$

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- I Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	Derive differential equation its solution and instantaneous displacement of the particle in damped simple harmonic ocilator.	5	CO1
1.B	(i) What are Lissajous figures ? Obtain an expression for resultant of two linear S.H.M. of frequencies2 : 1 and of different amplitudes, different phases.	3	CO1
	(ii) A mass of 25 gm is suspended with a vertical spring of force constant 25 N/m. The mechanical resistance of the system is 1.5 Ns/m. The mass is set to vertical oscillation. State whether themotion is oscillatory.	2	CO1
	OR		
1.C	What is Restoring force ? Obtain an expression for differential equation of linear simple harmonic oscillator.	2½	CO1
1.D	Show that for damped harmonic oscillator, total energy decreases exponentially with time.	2½	CO1
1.E	For a damped harmonic oscillator show that average power dissipation is given by $P_{diss} = 2bE$.	2½	CO1
1.F	A particle executing a S.H.M. has a maximum displacement of 4 cm and its acceleration at a distance of 1 cm from its mean position is 3 cm/s^2. What will be its velocity, when it is at a distance of 2 cmfrom its mean position ?	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- I Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	Derive differential equation its solution and instantaneous displacement of the particle in damped simple harmonic ocilator.	5	CO1
1.B	(i) What are Lissajous figures ? Obtain an expression for resultant of two linear S.H.M. of frequencies2 : 1 and of different amplitudes, different phases.	3	CO1
	(ii) A mass of 25 gm is suspended with a vertical spring of force constant 25 N/m. The mechanical resistance of the system is 1.5 Ns/m. The mass is set to vertical oscillation. State whether themotion is oscillatory.	2	CO1
	OR		
1.C	What is Restoring force ? Obtain an expression for differential equation of linear simple harmonic oscillator.	2½	CO1
1.D	Show that for damped harmonic oscillator, total energy decreases exponentially with time.	2½	CO1
1.E	For a damped harmonic oscillator show that average power dissipation is given by $P_{diss} = 2bE$.	2½	CO1
1.F	A particle executing a S.H.M. has a maximum displacement of 4 cm and its acceleration at a distance of 1 cm from its mean position is 3 cm/s^2. What will be its velocity, when it is at a distance of 2 cmfrom its mean position ?	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- II Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	What is forced oscillator? Establish the differential equation for a forced oscillator. Distinguish between free and forced oscillations.	5	CO1
1.B	(i) Explain the variation of amplitude with driving force frequency in a forced oscillation.	3	CO1
	(ii) Calculate the maximum amplitude of the forced harmonic oscillator at resonance with amplitudeof driving force F = 6N, mass of damped oscillator is 0.2 kg, spring constant k = 100 Nm^{-1},Damping constant R = 5 $Nm^{-1}s$.	2	CO1
	OR		
1.C	What is quality factor? Give the physical significance of quality factor of a forced oscillator.	2½	CO1
1.D	What is amplitude resonance? Show that resonance frequency at amplitude resonance is given by $Pr = \sqrt{w^2 + 2b^2}$.	2½	CO1
1.E	Write the expression for displacement of a particle performing forced oscillations. Show that maximum displacement is given by $A_{max} = \frac{f}{2b\sqrt{w^2-b^2}}$	2½	CO1
1.F	A harmonic oscillator consisting of 100 gm mass attached to a massless spring has a quality factor 300.If it oscillates with an amplitude of 2 cm in resonance with a periodic force of frequency 20 Hz, calculate (i) the average energy stored in it and (ii) the rate of dissipation of energy.	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- II Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	What is forced oscillator? Establish the differential equation for a forced oscillator. Distinguish between free and forced oscillations.	5	CO1
1.B	(i) Explain the variation of amplitude with driving force frequency in a forced oscillation.	3	CO1
	(ii) Calculate the maximum amplitude of the forced harmonic oscillator at resonance with amplitudeof driving force F = 6N, mass of damped oscillator is 0.2 kg, spring constant k = 100 Nm^{-1},Damping constant R = 5 $Nm^{-1}s$.	2	CO1
	OR		
1.C	What is quality factor? Give the physical significance of quality factor of a forced oscillator.	2½	CO1
1.D	What is amplitude resonance? Show that resonance frequency at amplitude resonance is given by $Pr = \sqrt{w^2 + 2b^2}$.	2½	CO1
1.E	Write the expression for displacement of a particle performing forced oscillations. Show that maximum displacement is given by $A_{max} = \frac{f}{2b\sqrt{w^2-b^2}}$	2½	CO1
1.F	A harmonic oscillator consisting of 100 gm mass attached to a massless spring has a quality factor 300.If it oscillates with an amplitude of 2 cm in resonance with a periodic force of frequency 20 Hz, calculate (i) the average energy stored in it and (ii) the rate of dissipation of energy.	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- I Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	Derive differential equation its solution and instantaneous displacement of the particle in damped simple harmonic ocilator.	5	CO1
1.B	(i) What are Lissajous figures ? Obtain an expression for resultant of two linear S.H.M. of frequencies2 : 1 and of different amplitudes, different phases.	3	CO1
	(ii) A mass of 25 gm is suspended with a vertical spring of force constant 25 N/m. The mechanical resistance of the system is 1.5 Ns/m. The mass is set to vertical oscillation. State whether themotion is oscillatory.	2	CO1
	OR		
1.C	What is Restoring force ? Obtain an expression for differential equation of linear simple harmonic oscillator.	2½	CO1
1.D	Show that for damped harmonic oscillator, total energy decreases exponentially with time.	2½	CO1
1.E	For a damped harmonic oscillator show that average power dissipation is given by $P_{diss} = 2bE$.	2½	CO1
1.F	A particle executing a S.H.M. has a maximum displacement of 4 cm and its acceleration at a distance of 1 cm from its mean position is 3 cm/s^2. What will be its velocity, when it is at a distance of 2 cmfrom its mean position ?	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- I Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	Derive differential equation its solution and instantaneous displacement of the particle in damped simple harmonic ocilator.	5	CO1
1.B	(i) What are Lissajous figures ? Obtain an expression for resultant of two linear S.H.M. of frequencies2 : 1 and of different amplitudes, different phases.	3	CO1
	(ii) A mass of 25 gm is suspended with a vertical spring of force constant 25 N/m. The mechanical resistance of the system is 1.5 Ns/m. The mass is set to vertical oscillation. State whether themotion is oscillatory.	2	CO1
	OR		
1.C	What is Restoring force ? Obtain an expression for differential equation of linear simple harmonic oscillator.	2½	CO1
1.D	Show that for damped harmonic oscillator, total energy decreases exponentially with time.	2½	CO1
1.E	For a damped harmonic oscillator show that average power dissipation is given by $P_{diss} = 2bE$.	2½	CO1
1.F	A particle executing a S.H.M. has a maximum displacement of 4 cm and its acceleration at a distance of 1 cm from its mean position is 3 cm/s^2. What will be its velocity, when it is at a distance of 2 cmfrom its mean position ?	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- II Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	What is forced oscillator? Establish the differential equation for a forced oscillator. Distinguish between free and forced oscillations.	5	CO1
1.B	(i) Explain the variation of amplitude with driving force frequency in a forced oscillation.	3	CO1
	(ii) Calculate the maximum amplitude of the forced harmonic oscillator at resonance with amplitudeof driving force F = 6N, mass of damped oscillator is 0.2 kg, spring constant k = 100 Nm^{-1},Damping constant R = 5 $Nm^{-1}s$.	2	CO1
	OR		
1.C	What is quality factor? Give the physical significance of quality factor of a forced oscillator.	2½	CO1
1.D	What is amplitude resonance? Show that resonance frequency at amplitude resonance is given by $Pr = \sqrt{w^2 + 2b^2}$.	2½	CO1
1.E	Write the expression for displacement of a particle performing forced oscillations. Show that maximum displacement is given by $A_{max} = \frac{f}{2b\sqrt{w^2-b^2}}$	2½	CO1
1.F	A harmonic oscillator consisting of 100 gm mass attached to a massless spring has a quality factor 300.If it oscillates with an amplitude of 2 cm in resonance with a periodic force of frequency 20 Hz, calculate (i) the average energy stored in it and (ii) the rate of dissipation of energy.	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- II Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	What is forced oscillator? Establish the differential equation for a forced oscillator. Distinguish between free and forced oscillations.	5	CO1
1.B	(i) Explain the variation of amplitude with driving force frequency in a forced oscillation.	3	CO1
	(ii) Calculate the maximum amplitude of the forced harmonic oscillator at resonance with amplitudeof driving force F = 6N, mass of damped oscillator is 0.2 kg, spring constant k = 100 Nm^{-1},Damping constant R = 5 $Nm^{-1}s$.	2	CO1
	OR		
1.C	What is quality factor? Give the physical significance of quality factor of a forced oscillator.	2½	CO1
1.D	What is amplitude resonance? Show that resonance frequency at amplitude resonance is given by $Pr = \sqrt{w^2 + 2b^2}$.	2½	CO1
1.E	Write the expression for displacement of a particle performing forced oscillations. Show that maximum displacement is given by $A_{max} = \frac{f}{2b\sqrt{w^2-b^2}}$	2½	CO1
1.F	A harmonic oscillator consisting of 100 gm mass attached to a massless spring has a quality factor 300.If it oscillates with an amplitude of 2 cm in resonance with a periodic force of frequency 20 Hz, calculate (i) the average energy stored in it and (ii) the rate of dissipation of energy.	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- I Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	Derive differential equation its solution and instantaneous displacement of the particle in damped simple harmonic ocilator.	5	CO1
1.B	(i) What are Lissajous figures ? Obtain an expression for resultant of two linear S.H.M. of frequencies2 : 1 and of different amplitudes, different phases.	3	CO1
	(ii) A mass of 25 gm is suspended with a vertical spring of force constant 25 N/m. The mechanical resistance of the system is 1.5 Ns/m. The mass is set to vertical oscillation. State whether themotion is oscillatory.	2	CO1
	OR		
1.C	What is Restoring force ? Obtain an expression for differential equation of linear simple harmonic oscillator.	2½	CO1
1.D	Show that for damped harmonic oscillator, total energy decreases exponentially with time.	2½	CO1
1.E	For a damped harmonic oscillator show that average power dissipation is given by $P_{diss} = 2bE$.	2½	CO1
1.F	A particle executing a S.H.M. has a maximum displacement of 4 cm and its acceleration at a distance of 1 cm from its mean position is 3 cm/s^2. What will be its velocity, when it is at a distance of 2 cmfrom its mean position ?	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- I Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	Derive differential equation its solution and instantaneous displacement of the particle in damped simple harmonic ocilator.	5	CO1
1.B	(i) What are Lissajous figures ? Obtain an expression for resultant of two linear S.H.M. of frequencies2 : 1 and of different amplitudes, different phases.	3	CO1
	(ii) A mass of 25 gm is suspended with a vertical spring of force constant 25 N/m. The mechanical resistance of the system is 1.5 Ns/m. The mass is set to vertical oscillation. State whether themotion is oscillatory.	2	CO1
	OR		
1.C	What is Restoring force ? Obtain an expression for differential equation of linear simple harmonic oscillator.	2½	CO1
1.D	Show that for damped harmonic oscillator, total energy decreases exponentially with time.	2½	CO1
1.E	For a damped harmonic oscillator show that average power dissipation is given by $P_{diss} = 2bE$.	2½	CO1
1.F	A particle executing a S.H.M. has a maximum displacement of 4 cm and its acceleration at a distance of 1 cm from its mean position is 3 cm/s^2. What will be its velocity, when it is at a distance of 2 cmfrom its mean position ?	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- II Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	What is forced oscillator? Establish the differential equation for a forced oscillator. Distinguish between free and forced oscillations.	5	CO1
1.B	(i) Explain the variation of amplitude with driving force frequency in a forced oscillation.	3	CO1
	(ii) Calculate the maximum amplitude of the forced harmonic oscillator at resonance with amplitudeof driving force F = 6N, mass of damped oscillator is 0.2 kg, spring constant k = 100 Nm^{-1},Damping constant R = 5 $Nm^{-1}s$.	2	CO1
	OR		
1.C	What is quality factor? Give the physical significance of quality factor of a forced oscillator.	2½	CO1
1.D	What is amplitude resonance? Show that resonance frequency at amplitude resonance is given by $Pr = \sqrt{w^2 + 2b^2}$.	2½	CO1
1.E	Write the expression for displacement of a particle performing forced oscillations. Show that maximum displacement is given by $A_{max} = \frac{f}{2b\sqrt{w^2-b^2}}$	2½	CO1
1.F	A harmonic oscillator consisting of 100 gm mass attached to a massless spring has a quality factor 300.If it oscillates with an amplitude of 2 cm in resonance with a periodic force of frequency 20 Hz, calculate (i) the average energy stored in it and (ii) the rate of dissipation of energy.	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur [Centre Code: 179]
Bachelor of Science (B. Sc.) Semester- II Unit Test
PHYSICS Paper- I
Session 2023-24

[Oscillations, Kinetic Theory of Gases and Thermodynamics]

Time – 45 Minuts **Maximum Marks – 10**

NOTE- 1] Each question carries equal marks
2] Draw neat diagram, whenever necessary

Q.N.		mark	CO
1.A	What is forced oscillator? Establish the differential equation for a forced oscillator. Distinguish between free and forced oscillations.	5	CO1
1.B	(i) Explain the variation of amplitude with driving force frequency in a forced oscillation.	3	CO1
	(ii) Calculate the maximum amplitude of the forced harmonic oscillator at resonance with amplitudeof driving force F = 6N, mass of damped oscillator is 0.2 kg, spring constant k = 100 Nm^{-1},Damping constant R = 5 $Nm^{-1}s$.	2	CO1
	OR		
1.C	What is quality factor? Give the physical significance of quality factor of a forced oscillator.	2½	CO1
1.D	What is amplitude resonance? Show that resonance frequency at amplitude resonance is given by $Pr = \sqrt{w^2 + 2b^2}$.	2½	CO1
1.E	Write the expression for displacement of a particle performing forced oscillations. Show that maximum displacement is given by $A_{max} = \frac{f}{2b\sqrt{w^2-b^2}}$	2½	CO1
1.F	A harmonic oscillator consisting of 100 gm mass attached to a massless spring has a quality factor 300.If it oscillates with an amplitude of 2 cm in resonance with a periodic force of frequency 20 Hz, calculate (i) the average energy stored in it and (ii) the rate of dissipation of energy.	2½	CO1

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA
RAMC
HAND

BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR **(Code:179)**
DEPARTMENT OF COMMERCE
Unit Test-1 (Session: 2023-24)
B.COM SEM I, III, and V
TIME : One Hour

DATE	B.COM SEM I	B.COM SEM III	B.COM SEM V
09-08-23 WEDNESDAY	COMPULSORY ENGLISH	COMPULSORY ENGLISH	COST ACCOUNTING
	SUPPLEMENTRY ENG. / HINDI / MARATHI	SUPPLEMENTRY ENG. / HINDI / MARATHI	MANAGEMENT PROCESS
10-08-23 THURSDAY	FINANCIAL ACCOUNTING –I	FINANCIAL ACCOUNTING –II	FINANCIAL ACCOUNTING-IV
	BUSINESS ECONOMICS – I	MONETARY ECONOMICS-I	INDIAN ECONOMICS-I
11-08-23 FRIDAY	BUSINESS SKILLS	INCOME TAX	BUSINESS FINANCE-I
	COMMERCIAL FIRMS	HOLISTIC DEVELOPMENT	COMPUTERIZED ACCOUNTING

NOTE : 1] Question papers are of descriptive type and time duration is 3 hours.
2] Student should report 15 minutes before commencement of Examination.

Date : 05-08-2023

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR **(Code:179)**

DEPARTMENT OF COMMERCE

Unit Test-2 (Session: 2023-24)

B.COM SEM I, III, and V

TIME : One Hour

DATE	B.COM SEM I	B.COM SEM III	B.COM SEM V
21-09-23 THURSDAY	COMPULSORY ENGLISH	COMPULSORY ENGLISH	COST ACCOUNTING
	SUPPLEMENTRY ENG. / HINDI / MARATHI	SUPPLEMENTRY ENG. / HINDI / MARATHI	MANAGEMENT PROCESS
22-09-23 FRIDAY	FINANCIAL ACCOUNTING –I	FINANCIAL ACCOUNTING –II	FINANCIAL ACCOUNTING-IV
	BUSINESS ECONOMICS – I	MONETARY ECONOMICS-I	INDIAN ECONOMICS-I
23-09-23 SATURDAY	BUSINESS SKILLS	INCOME TAX	BUSINESS FINANCE-I
	COMMERCIAL FIRMS	HOLISTIC DEVELOPMENT	COMPUTERIZED ACCOUNTING

NOTE : 1] Question papers are of descriptive type and time duration is 3 hours.
2] Student should report 15 minutes before commencement of Examination.

for Admin

Date : 18-09-2023

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR **(Code:179)**
DEPARTMENT OF COMMERCE
Preliminary Examination (Session: 2023-24)
B.COM SEM I, III, and V
TIME : 8.00 A.M. – 11.00 A.M.

DATE	B.COM SEM I	B.COM SEM III	B.COM SEM V
16-10-23 MONDAY	COMPULSORY ENGLISH	COMPULSORY ENGLISH	COST ACCOUNTING
17-10-23 TUESDAY	SUPPLEMENTRY ENG. / HINDI / MARATHI	SUPPLEMENTRY ENG. / HINDI / MARATHI	MANAGEMENT PROCESS
18-10-23 WEDNESDAY	FINANCIAL ACCOUNTING –I	FINANCIAL ACCOUNTING –II	FINANCIAL ACCOUNTING-IV
19-10-23 THURSDAY	BUSINESS ECONOMICS – I	MONETARY ECONOMICS-I	INDIAN ECONOMICS-I
20-10-23 FRIDAY	BUSINESS SKILLS	INCOME TAX	BUSINESS FINANCE-I
21-10-23 SATURDAY	COMMERCIAL FIRMS	HOLISTIC DEVELOPMENT	COMPUTERIZED ACCOUNTING

NOTE : 1] Question papers are of descriptive type and time duration is 3 hours.
2] Student should report 15 minutes before commencement of Examination.

Date : 18-09-2023

D.R.B. SINDHU MAHAVIDYALAYA ★ NAGPUR ★

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA
RAMC
HAND

BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR **(Code:179)**
DEPARTMENT OF COMMERCE
Unit Test – 1 (Session: 2023-24)
B.COM SEM II, IV, and VI
TIME : One Hour

DATE	B.COM SEM II	B.COM SEM IV	B.COM SEM VI
04-01-24 WEDNESDAY	COMPULSORY ENGLISH	COMPULSORY ENGLISH	MANAGEMENT ACCOUNTING
	SUPPLEMENTRY ENG. / HINDI / MARATHI	SUPPLEMENTRY ENG. / HINDI / MARATHI	ADVANCE STATISTICS
05-01-24 THURSDAY	SBM –I	FINANCIAL ACCOUNTING –II	FINANCIAL ACCOUNTING-V
	BUSINESS ECONOMICS – II	MONETARY ECONOMICS-II	INDIAN ECONOMICS-II
06-01-24 FRIDAY	FINANCIAL MARKETS OPERATION	SECTERIAL PRACTISE	BUSINESS FINANCE-II
	COMMERCIAL SERVICES	ORGANISATION BEHAVIOR	INDIRECT TAX

NOTE : 1] Question papers are of descriptive type and time duration is 3 hours.
2] Student should report 15 minutes before commencement of Examination.

for Dewai

Date : 02-01-2024

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR **(Code:179)**

DEPARTMENT OF COMMERCE

Unit Test – 2 (Session: 2023-24)

B.COM SEM II, IV, and VI

TIME : One Hour

DATE	B.COM SEM II	B.COM SEM IV	B.COM SEM VI
09-03-24 THURSDAY	COMPULSORY ENGLISH	COMPULSORY ENGLISH	MANAGEMENT ACCOUNTING
	SUPPLEMENTRY ENG. / HINDI / MARATHI	SUPPLEMENTRY ENG. / HINDI / MARATHI	ADVANCE STATISTICS
10-03-24 FRIDAY	SBM –I	FINANCIAL ACCOUNTING –II	FINANCIAL ACCOUNTING-V
	BUSINESS ECONOMICS – II	MONETARY ECONOMICS-II	INDIAN ECONOMICS-II
11-03-24 SATURDAY	FINANCIAL MARKETS OPERATION	SECTERIAL PRACTISE	BUSINESS FINANCE-II
	COMMERCIAL SERVICES	ORGANISATION BEHAVIOR	INDIRECT TAX

NOTE : 1] Question papers are of descriptive type and time duration is 3 hours.
2] Student should report 15 minutes before commencement of Examination.

for Dawon

Date : 06-03-2024

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA, NAGPUR **(Code:179)**
DEPARTMENT OF COMMERCE
Preliminary Examination (Session: 2023-24)
B.COM SEM II, IV, and VI
TIME : 8.00 A.M. – 11.00 A.M.

DATE	B.COM SEM II	B.COM SEM IV	B.COM SEM VI
22-04-24 MONDAY	COMPULSORY ENGLISH	COMPULSORY ENGLISH	MANAGEMENT ACCOUNTING
23-04-24 TUESDAY	SUPPLEMENTRY ENG. / HINDI / MARATHI	SUPPLEMENTRY ENG. / HINDI / MARATHI	ADVANCE STATISTICS
24-04-24 WEDNESDAY	SBM –I	FINANCIAL ACCOUNTING –II	FINANCIAL ACCOUNTING-V
25-04-24 THURSDAY	BUSINESS ECONOMICS – II	MONETARY ECONOMICS-II	INDIAN ECONOMICS-II
26-04-24 FRIDAY	FINANCIAL MARKETS OPERATION	SECTERIAL PRACTISE	BUSINESS FINANCE-II
27-04-24 SATURDAY	COMMERCIAL SERVICES	ORGANISATION BEHAVIOR	INDIRECT TAX

NOTE : 1] Question papers are of descriptive type and time duration is 3 hours.
2] Student should report 15 minutes before commencement of Examination.

Date : 01-04-2024

D. R. B. SINDHU MAHAVIDYALAYA NAGPUR

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DATE : 20/09/2023

DRB SINDHU MAHAVIDYALAYA, PANCHPAOLI, NAGPUR

(ACADEMIC YEAR 2023-24)

VIVA NOTICE

This is to inform all the students of B.COM. Sem I / Sem III/ SEM V that the VIVA VOCE will be held as per the schedule given below:-

TIME: 10:00 a.m.

Note:- Bring your Assignments along with you.

DATE &DAY	CLASS	Room No.
25 -10-23 WEDNESDAY	**B.COM Sem V** English Medium	GF-01
	Hindi Medium	GF-12
26 -10-23 THURSDAY	**B.COM Sem III** English Medium	GF-01
	Hindi Medium	GF-12
27 -10-23 FRIDAY	**B.COM Sem I** English Medium	GF-01
	Hindi Medium	GF-12

D.R.B. SINDHU MAHAVIDYALAYA NAGPUR

Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DATE : 01/04/2024

DRB SINDHU MAHAVIDYALAYA, PANCHPAOLI, NAGPUR

(ACADEMIC YEAR 2023-24)

VIVA NOTICE

This is to inform all the students of B.COM. Sem II / Sem IV/ SEM V1 that the VIVA VOCE will be held as per the schedule given below:-

TIME: 10:00 a.m.

Note:- Bring your Assignments along with you.

DATE &DAY	CLASS	Room No.
08-04-24 MONDAY	B.COM Sem VI English Medium	GF-01
	Hindi Medium	GF-02
12 -04-24 FRIDAY	B.COM Sem IV English Medium	GF-01
	Hindi Medium	GF-02
13 -04-24 SATURDAY	B.COM Sem II English Medium	GF-01
	Hindi Medium	GF-02

Date 01/04/2024

BY ORDER

D.R.B. SINDHU MAHAVIDYALAYA NAGPUR

Officiating Principal
Dada Ramchand Bakhru
Sindhu Mahavidyalaya, Nagpur-17

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,NA

Bachelor of Commerce (B.Com.) Semester–I 2023-24

UNIT TEST I MM20

FUNDAMENTALS OF ACCOUNTING

Q1.Arun is a trader dealing in automobiles. For the following transactions, pass journal entries for the month of January, 2021: [10] [CO1]

Jan.		Rs.
1	Commenced business with cash	90,000
2	Purchased goods from Varun and Co. on credit	40,000
3	Accepted bill drawn by Varun and Co.	20,000
4	Sold goods to Dinesh and Co. on credit	10,000
5	Paid by cash the bill drawn by Varun and Co.	
6	Received cheque from Dinesh and Co. in full settlement and deposited the same in bank	9,000
7	Commission received in cash	5,000
8	Goods costing Rs. 40,000 was sold and cash received	50,000
9	Salaries paid in cash	4,000
10	Building purchased from Kumar and Co. for Rs. 1,00,000 and an advance of Rs. 20,000 is given in cash	
11.	Cash Sales	1200
12.	Credit Sales	2800
13.	Good taken foe personal use	500
14.	Wages paid	200
15.	Rent paid by cheque	800
16.	Goods sold and cheque received	4000
18.	Electricity Bill received	200
19.	Good sold for cash after allowing discount of Rs.500	5,500
20.	Paid Salary in advance	500

Q2. From the following balances of Mr. Ajay, prepare Balance Sheet as on 31st March 2017 :[CO2]

Capital	6,00,000
Creditors	2,60,000
Cash in hand	6,000
Cash at Bank	20,000
Closing Stock	2,40,000
Bills Payable	80,000
Bills Receivable	60,000
Plant & Machinery	2,00,000
Goodwill	50,000
Loose Tools	40,000
Furniture	1,50,000
Net Profit (Cr)	1,03,000
Drawings	28,000
Debtors	2,50,000
Prepaid Insurance	2,000
Prepaid Advertisement	12,000

Adjustments :

(i) Depreciate Plant & Machinery by 5% and Loose Tools by 15% p.a.

(ii) Outstanding Salaries Rs. 2,000 and Office Expenses Rs. 1,000.

(iii) Commission Rs. 6,000 were received in advance.

(iv) Purchase included Rs. 10,000 purchase of furniture on 31-3-2017. 10

****

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,NAGPUR
Bachelor of Commerce (B.Com.) Semester–I 2023-24
UNIT TEST II
MAX.MARKS:20 **Fundamentals of Accounting**

-Q.1. Prepare Chandrapur Branch Account in the books of Nagpur Head office from the following particulars: [CO3]

Stock on 1-1-2002		8000
Debtors on 1-1-2002		3000
Furniture on 1-1-2002		10,000
Prepaid Insurance on 1-1-2002		2,000
Prtty Cash on 1-1-20002		800
Good supplied to Branch		80,000
Cash sent to Branch for Expenses :-		
Salaries	5000	
Insurances	1,500	
Petty Cash	1000	
		7500
Outstanding Wages on 31-12-2002		600
Oustanding Wages on 1-1-2002		3200
Cash Sale		65000
Debtors made direct payment to Head Office		5000
Debtors made payment to Branch		4000
Debtors returned good direct to Head Office		2500
Branch returned goods to head office		4000
Debtors on 31-12-2002		10,000
Stock on 31-12-2002		8000
Credit Sales		25000
Good Returned by Debtors		3,400
Discount allowed to Debtors		1,200
Petty Expenses paid by Branch		500

Depreciation is to be changed on furniture by 10 % p.a Good of Rs. 2,000 were destroyed by fire and Insurance Company admitted the claim for Rs. 1500 only and this amount is received from Insurance company Branch remitted necessary cash to head office.

Q2. Prepare Profit & Loss A/c of a Co-operative Society from the following information for the year ending 31-3-2017 : (10) [CO4]

Gross Profit 3,28,000
Salaries 30,000
Furniture 50,000
General Exps. 15,000
Insurance Premium 18,000
Dividend Received 12,000
Directors Fees 75,000
Commission Received 85,000
Audit Fees 3,000
Interest on Bank Loan 15,000
Membership Fees 2,500
Adjustment :Depreciate furniture @ 5%. 4

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,NAGPUR
Bachelor of Commerce (B.Com.) Semester–I 2023-24
UNIT TEST II
MAX.MARKS:20 **Fundamentals of Accounting**

-Q.1. Prepare Chandrapur Branch Account in the books of Nagpur Head office from the following particulars: [CO3]

Stock on 1-1-2002		8000
Debtors on 1-1-2002		3000
Furniture on 1-1-2002		10,000
Prepaid Insurance on 1-1-2002		2,000
Prtty Cash on 1-1-20002		800
Good supplied to Branch		80,000
Cash sent to Branch for Expenses :-		
Salaries	5000	
Insurances	1,500	
Petty Cash	1000	
		7500
Outstanding Wages on 31-12-2002		600
Oustanding Wages on 1-1-2002		3200
Cash Sale		65000
Debtors made direct payment to Head Office		5000
Debtors made payment to Branch		4000
Debtors returned good direct to Head Office		2500
Branch returned goods to head office		4000
Debtors on 31-12-2002		10,000
Stock on 31-12-2002		8000
Credit Sales		25000
Good Returned by Debtors		3,400
Discount allowed to Debtors		1,200
Petty Expenses paid by Branch		500

Depreciation is to be changed on furniture by 10 % p.a Good of Rs. 2,000 were destroyed by fire and Insurance Company admitted the claim for Rs. 1500 only and this amount is received from Insurance company Branch remitted necessary cash to head office.

Q2. Prepare Profit & Loss A/c of a Co-operative Society from the following information for the year ending 31-3-2017 : (10) [CO4]

Gross Profit 3,28,000
Salaries 30,000
Furniture 50,000
General Exps. 15,000
Insurance Premium 18,000
Dividend Received 12,000
Directors Fees 75,000
Commission Received 85,000
Audit Fees 3,000
Interest on Bank Loan 15,000
Membership Fees 2,500
Adjustment :Depreciate furniture @ 5%. 4

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,NAGPUR
Bachelor of Commerce (B.Com.) Semester–I 2023-24
BUSINESS SKILLS
UNIT TEST I

MM : 20 Time:1 hr

Answer the following:

Q.1 Define Business . Explain its characteristics and importance. [CO1] 10

Q.2 Explain the concept and meaning of Planning. Describe its characteristics. [CO2] 10

HINDI MEDIUM

Q1 व्यवसाय को परिभाषित करें। इसकी विशेषताएँ एवं महत्व बताइये। [सीओ1] 10

Q.2 नियोजन की अवधारणा एवं अर्थ स्पष्ट करें। इसकी विशेषताएँ बताइये। [सीओ2] 10

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,NAGPUR
Bachelor of Commerce (B.Com.) Semester–I 2023-24
BUSINESS SKILLS
UNIT TEST I

MM : 20 Time:1 hr

Answer the following:

Q.1 Define Business . Explain its characteristics and importance. [CO1] 10

Q.2 Explain the concept and meaning of Planning. Describe its characteristics. [CO2] 10

HINDI MEDIUM

Q1 व्यवसाय को परिभाषित करें। इसकी विशेषताएँ एवं महत्व बताइये। [सीओ1] 10

Q.2 नियोजन की अवधारणा एवं अर्थ स्पष्ट करें। इसकी विशेषताएँ बताइये। [सीओ2] 10

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,NAGPUR
Bachelor of Commerce (B.Com.) Semester–I 2023-24
BUSINESS SKILLS
UNIT TEST II

MM : 20 Time :1 hr

Q.1 Describe the different types of organization along with its advantages and disadvantages.

10 [CO3]

Q.2 What is meant by Control in organisation? Explain control process [CO4] 10

HINDI MEDIUM

Q.1 विभिन्न प्रकार के संगठन का उनके फायदे और नुकसान के साथ वर्णन करें।
10 [CO3]

Q.2 संगठन में नियंत्रण से क्या तात्पर्य है? नियंत्रण प्रक्रिया समझाएं [CO4]

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur.

Unit Test 2

2023-24

B.COM SEM I (OB & CBCS)

SUBJECT- COMMERCIAL FIRMS

Max. Marks: 20 **Time: 45 Min.**

Q.1. Explain the procedure for the registration of a new company? CO3 08
एक नई कंपनी के पंजीकरण के लिए प्रक्रिया की व्याख्या करें?

OR

Explain the Disadvantages of the company.
कंपनी के नुकसान की व्याख्या करें।

Q.2. State the method of preparing a project report for a start-up. CO4 08
एक स्टार्ट-अप के लिए एक परियोजना रिपोर्ट तैयार करने की विधि बताएं।

OR

Explain the characteristics of a startup.
स्टार्टअप की विशेषताओं की व्याख्या करें।

Q.3. Explain the activities involved in company business. CO3 04
कंपनी व्यवसाय में शामिल गतिविधियों की व्याख्या करें

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur.

Unit Test 1

2023-24

B.COM SEM I (OB & CBCS)

SUBJECT- COMMERCIAL FIRMS

Max. Marks: 20 **Time: 45 Min.**

Q.1. Describe the importance of a commercial firm. CO1 08

एक वाणिज्यिक फर्म के महत्व की व्याख्या कीजिए।

OR

Explain contribution of commercial firms in economic growth.

आर्थिक विकास में वाणिज्यिक फर्मों के योगदान की व्याख्या कीजिए।

Q.2. Explain the procedure for registration of a partnership firm. CO2 08

साझेदारी फर्म के पंजीकरण की प्रक्रिया की व्याख्या कीजिए।

OR

What activities are involved in the sole trader business?

एकमात्र व्यापारी व्यवसाय में कौन सी गतिविधियां शामिल हैं?

Q.3. Explain the meaning of Commerce in detail. CO1 04

वाणिज्य का अर्थ विस्तार से बताएं।

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur.

Unit Test 1

2023-24

B.COM SEM II (OB & CBCS)

SUBJECT- COMMERCIAL SERVICES

Max. Marks: 20 **Time: 45 Min.**

Q.1. Explain the importance of Service Sector in India. CO1 08

भारत में सेवा क्षेत्र के महत्व की व्याख्या करें।

Q.2. Explain the meaning and role of aviation services/industry in detail. CO2 08

विमानन सेवाओं/उद्योग के अर्थ और भूमिका की विस्तार से व्याख्या कीजिए।

Q.3. Emerging Trends in Service Sector in India. CO1 04

भारत में सेवा क्षेत्र में उभरते रुझान।

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur
Prelims Examination 2023-24
B.Com. (Semester –I)
Subject : Business Economics I

Time: Three Hours Max. Marks: 80

N.B.:— (1) ALL questions are compulsory.
(2) All questions carry equal marks.

(CO1) 1. (A) what is the fundamental problem of an Economy? 8

(B) Explain the various stages of economic evolution. 8

OR

(C)Explain the scarcity definition of economics . 16

(CO2) 2. (A) Explain Law of Demand. State determinants of Demand. 8

(B) Define the elasticity of demand. Write the types of elasticity of demand. 8

OR

(C) State the various factors influencing elasticity of demand. 16

(CO3) 3. (A) what is demand forecasting? 8

(B) Give the various methods of demand forecasting. 8

OR

(C) Enumerate the Qualitative techniques of demand forecasting in details. 16

(CO4) 4. (A) Define production. Explain different factor of production. 8

(B) what is supply? 8

OR

(C) Explain meaning, assumption, importance and criticisms of law of supply. 16

5. Write short answers:—

(CO1) (A) Explain the concept of goods. 4

(CO2) (B) Explain Direct and Derived Demand. 4

(CO3) (C)Explain Econometric method. 4

(CO4) (D)Define the term elasticity of supply? 4

DADA RAMCHAND BAKHRU SINDHU MAHAVIDYALAYA,NAGPUR

Preliminary Examination 2023-24
Bachelor of Commerce (B.Com.) Semester–II
FINANCIAL MARKET OPERATIONS
वित्तीय बाजार संचालन
Compulsory Paper—2

Time : Three Hours] [Maximum Marks : 80

N.B. :— (1) ALL questions are compulsory.
(2) All questions carry equal marks.

1. (क) निवेश कंपनियों का अर्थ लिखिए। निवेश कंपनियों के विभिन्न कार्य क्या हैं? 8
(b) विकास बैंक क्या हैं? विकास बैंक कौन-कौन से कार्य करते हैं? 8

या

(सी)। SEBI [भारतीय प्रतिभूति विनिमय बोर्ड] के बारे में संक्षेप में लिखें। इसके कार्यों और भूमिका पर प्रकाश डालें **[CO1]** 16

2.(क)पूंजी बाजार क्या है? पूँजी बाजार की विशेषताएँ एवं महत्व लिखिए। 8
(ख)प्राथमिक बाजार क्या है? प्राथमिक बाजार के विभिन्न घटकों/खिलाड़ियों के बारे में लिखें। 8

या

(c) दीर्घकालीन कोष प्राप्त करने की विभिन्न विधियों की व्याख्या कीजिए। **[CO2]** 16

3.(a) द्वितीयक बाजार क्या है? इसकी भूमिका एवं महत्व के बारे में लिखिए। 8

(बी) नेशनल स्टॉक एक्सचेंज पर एक नोट लिखें। 8

या

(c) स्टॉक एक्सचेंज के कार्यों की विस्तार से व्याख्या कीजिए। **[CO3]** 16

4.(a) मुद्रा बाजार को परिभाषित कीजिए। इसके विभिन्न घटकों के बारे में संक्षेप में लिखिए। 8
(बी) क्रेडिट रेटिंग से आप क्या समझते हैं? इसके क्या फायदे हैं? 8

या

(c) क्रेडिट रेटिंग एजेंसियों CRICIL और ICRA की भूमिका और कार्यों के बारे में संक्षेप में लिखें। **[CO4]**16

5. **संक्षेप में उत्तर दीजिए :**

(ए) मर्चेंट बैंकिंग से आपका क्या मतलब है? **[CO1]** 4
(बी) अधिकार शेयरों और बोनस शेयरों के बीच अंतर करें **[CO2]** 4
(सी) बॉम्बे स्टॉक एक्सचेंज पर संक्षिप्त नोट्स लिखें। **[CO3]** 4
(डी) ट्रेजरी बिल और वाणिज्यिक पत्रों पर एक नोट लिखें? **[CO4]** 4

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur (Centre code: 179)
Prelims Examination
B.com Semester III 2023-24
HOLISTIC DEVELOPMENT

Time: 3 Hours **Full Marks: 80**

N.B.: (1) ALL questions are compulsory.
(2) All questions carry equal marks.

(CO1) 1. (A) State the definition &basic concepts of Holistic Development 8
(B) Explain the goals of Holistic Development 8

OR

(C) Explain the Multidisciplinary approach and elements of Holistic Development. 16

(CO2) 2. (A) Explain the key principles of Effective Time Management. 8

(B) Explain the benefits of Time Management. 8

OR

(C) Explain the various techniques of Time Management and its Matrix 16

(CO3) 3. (A) What do you mean by the term Stress? Explain its types 8

(B) What are the consequences of Stress? 8

OR

(C) Explain the strategies to create a Stress -Free Environment? 16

(CO4) 4. (A) Explain the need of Spirituality. 8

(B) Explain the purpose of Spiritual Development? 8

OR

(C) Explain the stages of Spiritual Development? 16

5. Write short answers:

(CO1) (A) Explain any 4 elements of Holistic Development 4

(CO2) (B) Explain the 4 Matrix of Time Management 4

(CO3) (C) Explain the types of Stress. 4

(CO4) (D) Explain Fowler's Stages of Faith 4