



॥ दुरितांचे तिमिर जावो ॥



JAWAHAR ARTS, SCIENCE & COMMERCE COLLEGE, ANADUR

TAL:- TULJAPUR, DIST:-OSMANABAD

2018-19

UNIT TEST: I (2018-2019)

CLASS:- B Sc I

PAPER NO. MAT-101

MARK:- 10

PAPER NAME:- Differential Calculus

NAME OF TEACHER:- M.N. Gadsing

DATE:- / /20 19-09-18

TIME:- 20 (30) (1)

Q.1 find n^{th} derivative of

i) $y = \frac{x^4}{(x-1)(x-2)(x-3)}$

ii) $y = e^{mx} \cdot \cos^2 x - \sin x$


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Shikshan Prasarak Mandal, Anadur's
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Anadur, Tq. Tuljapur, Dist- Osmanabad -413603



INTERNAL QUALITY ASSURANCE CELL

Year- 2018-19

Internal Evaluation 2018-2019

Date- 19/09/2018

Department of Mathematics

Presenty Report of Test/ ~~XXXXXX~~ - I

Class: B & - I, Semester: I, Name of Paper: Differential Calculus,
Paper No. : MAT-101 Marks

Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A
1	AA-04	P	26	AA-70	P	51			76		
2	-05	P	27	-71	P	52			77		
3	-06	P	28	-74	P	53			78		
4	-09	P	29	-76	P	54			79		
5	-10	P	30	-78	P	55			80		
6	-17	P	31	-85	P	56			81		
7	-18	P	32	-88	P	57			82		
8	-22	P	33	-89	AB	58			83		
9	-45	P	34	-96	P	59			84		
10	-46	P	35	-97	P	60			85		
11	-51	P	36	-102	P	61			86		
12	-32	AB	37	-109	P	62			87		
13	-40	P	38	-111	P	63			88		
14	-42	P	39	-115	P	64			89		
15	-50	P	40	-116	P	65			90		
16	-57	P	41	-122	P	66			91		
17	-75	P	42	-124	P	67			92		
18	-56	AB	43	-125	P	68			93		
19	-62	P	44	-132	AB	69			94		
20	-59	P	45	-128	P	70			95		
21	-65	P	46	-129	P	71			96		
22	-60	AB	47	-16	P	72			97		
23	-64	P	48	-69	AB	73			98		
24	-68	P	49	-77	P	74			99		
25	-58	P	50	-13	P	75			100		

[Signature]
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Tq. Tuljapur, Dist. Osmanabad.

Number of student present- 44 Number of students absent- 06 Total students- 50

sign *[Signature]*
M.N. Gauding



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INTERNAL QUALITY ASSURANCE CELL

Year: 2018-19

Internal Evaluation 2018-2019

Date- 19/09/2018

Department of Mathematics

Present-Absent Report of Test/~~Tutorial~~ - I

Class: B.Sc-I

Semester: T, Time:

Name of Paper: Differential Calculus


Paper No. : , Marks: 10

Name of Invigilator: Madhuni N. Gaudsing

MAT-101

Roll number of present Students	Roll number of absent Students	Total
AA - 04, 05, 06, 09, 10, 13, 17, 16, 18, 22, 40, 42, 45, 46, 50, 51, 58, 57, 75, 62, 59, 64, 65, 68, 70, 71, 74, 76, 77, 78, 85, 88, 94, 97, 102, 109, 111, 115, 116, 122, 124, 125, 128, 129,	AA - 32, 56, 60, 69, 89, 132,	50
Total present Students = 44	Total absent Students = 06	


Signature of Invigilator


Co-Ordinator
Internal Quality Assurance Cell
Coordinator of Internal evaluation cell,
Jawahar Arts, Science & Commerce College,
Anadur, Tq.- Tuljapur, Dist.- Osmanabad.


PRINCIPAL
Signature of Principal
Jawahar Arts, Science & Commerce
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Tal. Tuljapur, Dist. Osmanabad.



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Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Tutorial - I

Year- 2018-19

SEMESTER: I

Class: B.Sc. I

Subject: Mathematics

Paper No.: MAT-101

Date: / / Name of the Paper: Differential Calculus

Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1. Show that $f(x) = x \cdot |x|$ is derivable at the origin. 05

Q. 2. If $x = a(\cos \theta + \theta \sin \theta)$, $y = a(\sin \theta - \theta \cos \theta)$, find $\frac{d^2x}{dx^2}$. 05


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INTERNAL QUALITY ASSURANCE CELL

Internal Evaluation 2018-19

Department of Mathematics

Name of Teacher: Madhuri N. Gadsing

Class: B. Sc.I,


Semester: I,

Name of Paper: Differential Calculus,

Paper No. :MAT-101,

Marks: Test-10, Tutorial -10, Total-20

Sr. No.	Roll. No	Test	Tutorial	Total	Sr. No.	Roll. No	Test	Tutorial	Total
1	AA-04	8	9	17	31	AA-85	8	9	17
2	AA-05	9	10	19	32	AA-88	7	8	15
3	AA-06	7	10	17	33	AA-89	AB	8	8
4	AA-09	6	9	15	34	AA-94	5	8	13
5	AA-10	8	8	16	35	AA-97	7	8	15
6	AA-17	8	9	17	36	AA-102	8	9	17
7	AA-18	7	9	16	37	AA-109	7	10	17
8	AA-22	9	10	19	38	AA-111	6	10	16
9	AA-45	10	10	20	39	AA-115	6	9	15
10	AA-46	10	10	20	40	AA-116	5	8	13
11	AA-51	8	8	16	41	AA-122	5	8	13
12	AA-32	AB	8	8	42	AA-124	8	9	17
13	AA-40	7	9	16	43	AA-125	9	9	18
14	AA-42	6	9	15	44	AA-132	AB	AB	AB
15	AA-50	5	8	13	45	AA-128	7	8	15
16	AA-58	8	8	16	46	AA-129	7	8	15
17	AA-57	9	8	17	47	AA-16	6	8	14
18	AA-75	7	9	16	48	AA-69	AB	9	9
19	AA-56	AB	AB	AB	49	AA-77	8	9	17
20	AA-62	8	9	17	50	AA-13	7	9	16
21	AA-59	6	10	16	51				
22	AA-65	5	8	13	52				
23	AA-60	AB	AB	AB	53				
24	AA-64	7	8	15	54				
25	AA-68	7	9	16	55				
26	AA-71	8	9	17	56				
27	AA-70	9	10	19	57				
28	AA-74	10	10	20	58				
29	AA-76	6	8	14	59				
30	AA-78	6	9	17	60				


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अणदूर ता. तुळजापूर.

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TAL:- TULJAPUR, DIST:-OSMANABAD

2018-19

UNIT TEST: I (2018-2019)

CLASS:- B.Sc-II

PAPER NO. MAT-302 MARK:- 10

PAPER NAME:- Integral Transform.

NAME OF TEACHER:- M.N. Gadsing

DATE:- / / 20 19-09-18

TIME:-

- Q.1 Define Laplace Transform.
Find the Laplace Transform of
- $[t^2 + 5t + 4] \sin 5t$
 - $e^{-3t} [5 \sinh 3t + 4 \cosh 3t]$


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INTERNAL QUALITY ASSURANCE CELL

Year- 2018-19

Internal Evaluation 20 -20

Date- 19/09/2018

Department of Mathematics

Presenty Report of Test/~~XXXXXX~~ - I

Class: B.Sc II, Semester: III, Name of Paper: Integral Transform,
Paper No. : MAT-302 Marks

Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A
1	AB-01	P	26	AB-99	P	51			76		
2	-16	P	27	-100	P	52			77		
3	-19	P	28	-101	P	53			78		
4	-21	P	29	-102	AB	54			79		
5	-22	P	30	-112	P	55			80		
6	-28	P	31	-114	AB	56			81		
7	-32	P	32	-115	P	57			82		
8	-34	P	33	-116	P	58			83		
9	-37	P	34	-118	P	59			84		
10	-43	AB	35	-119	AB	60			85		
11	-45	P	36			61			86		
12	-49	P	37			62			87		
13	-51	P	38			63			88		
14	-52	P	39			64			89		
15	-53	AB	40			65			90		
16	-58	P	41			66			91		
17	-61	P	42			67			92		
18	-62	P	43			68			93		
19	-72	P	44			69			94		
20	-73	P	45			70			95		
21	-83	AB	46			71			96		
22	-85	P	47			72			97		
23	-91	P	48			73			98		
24	-94	P	49			74			99		
25	-95	P	50			75			100		

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Number of student present-
-29

Number of students absent-
-06

Total students- 35

sign M. N. Gadhing
M. N. Gadhing



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INTERNAL QUALITY ASSURANCE CELL

Year - 2018-19

Internal Evaluation 2018-2019

Date- 19/09/2018

Department of Mathematics

Present-Absent Report of Test/~~Tutorial~~ - I

Class: B.Sc.II

Semester: III, Time:

Name of Paper: Integral Transform

Paper No. MAT.302 Marks: 10

Name of Invigilator: Madhuri N. Gadgil

Roll number of present Students	Roll number of absent Students	Total
AB- 01, 16, 19, 21, 22, 28, 33, 34, 37, 45, 49, 51, 52, 55, 61, 62, 72, 73, 85, 91, 94, 95, 99, 100, 101, 112, 115, 116, 118	AB- 43 , 53, 83, 102, 114, 119.	35
Total present Students = <u>29</u>	Total absent Students = <u>06</u>	

Signature of Invigilator

Co-Ordinator

Coordinator of Internal Evaluation Cell
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Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Tutorial - I

Year- 2018-19

SEMESTER: III

Class: B.Sc. II

Subject: Mathematics

Paper No.: MAT-302

Date: / /

Name of the Paper: Integral Transform

Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1 If $L[F(t)] = f(s)$ then prove that $L[e^{at}F(t)] = f(s - a)$ 05

Q.2 Define Beta and Gamma functions. Prove that $B(l, m) = B(m, l)$. 05


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INTERNAL QUALITY ASSURANCE CELL

Internal Evaluation 2018-19

Department of Mathematics

Name of Teacher: Madhuri N. Gadsing

Class: B. Sc.II,


Semester: III,

Name of Paper: Integral Transform,

Paper No. :MAT-302,

Marks: Test-10, Tutorial -10, Total-20

Sr. No.	Roll. No	Test	Tutorial	Total	Sr. No.	Roll. No	Test	Tutorial	Total
1	AB-01	5	8	13	31	AB-114	AB	8	8
2	AB-16	8	9	17	32	AB-115	8	9	17
3	AB-19	7	10	17	33	AB-116	9	10	19
4	AB-21	7	9	16	34	AB-118	8	9	17
5	AB-22	9	10	19	35	AB-119	AB	8	8
6	AB-28	6	9	15	36				
7	AB-33	10	10	20	37				
8	AB-34	10	10	20	38				
9	AB-37	7	8	15	39				
10	AB-43	AB	8	8	40				
11	AB-45	10	10	20	41				
12	AB-49	8	9	17	42				
13	AB-51	7	9	16	43				
14	AB-52	10	10	20	44				
15	AB-53	AB	8	8	45				
16	AB-55	6	8	14	46				
17	AB-61	5	9	14	47				
18	AB-62	6	9	15	48				
19	AB-72	10	10	20	49				
20	AB-73	10	10	20	50				
21	AB-83	AB	8	8	51				
22	AB-85	6	9	15	52				
23	AB-91	7	9	16	53				
24	AB-94	8	8	16	54				
25	AB-95	9	8	17	55				
26	AB-99	9	9	18	56				
27	AB-100	8	9	17	57				
28	AB-101	7	9	16	58				
29	AB-102	AB	AB	00	59				
30	AB-112	7	8	15	60				


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JAWAHAR ARTS, SCIENCE & COMMERCE COLLEGE, ANADUR

TAL:- TULJAPUR, DIST:-OSMANABAD 2018-19

UNIT TEST: I (20 -20)

CLASS:- B.Sc. III

PAPER NO. MAT-501 MARK:- 10

PAPER NAME:-

~~Algebra~~ Analysis - I

NAME OF TEACHER:-

M.N. Gadsing

DATE:- / /20

19-09-18

TIME:-

Q.1 Define a sequence of real number. 10

$$\text{for } n \in \mathbb{I}, \text{ let } S_n = \frac{1 \cdot 3 \cdot 5 \dots (2n-1)}{2 \cdot 4 \cdot 6 \dots 2n}$$

prove that $\{S_n\}$ is convergent &


$$\lim_{n \rightarrow \infty} S_n = \frac{1}{2}$$

OR

Q.2 Define i) infinite series of real number.
ii) Convergent & divergent series of real number. 10

Prove that the series

$$1 - \frac{1}{2} + \frac{1}{2^2} - \frac{1}{2^3} + \dots \text{ converges.}$$


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INTERNAL QUALITY ASSURANCE CELL

Year 2018-19

Internal Evaluation 20 -20


Date- 19/09/2018

Department of Mathematics

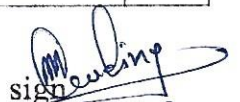
Presenty Report of Test/ ~~XXXXXX~~ - I

Class: B.Sc-III, Semester: V, Name of Paper: Real Analysis-I,
Paper No. : MAT-501 Marks

Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A
1	AC-01	AB	26	AC-62	AB	51			76		
2	-04	P	27	-63	AB	52			77		
3	-05	P	28	-64	P	53			78		
4	-06	P	29	-68	P	54			79		
5	-08	P	30	-69	P	55			80		
6	-10	AB	31	-70	P	56			81		
7	-11	P	32	-76	AB	57			82		
8	-17	P	33	-82	P	58			83		
9	-18	P	34	-89	P	59			84		
10	-20	P	35	-93	P	60			85		
11	-22	P	36	-94	P	61			86		
12	-23	P	37	-95	P	62			87		
13	-24	P	38	-96	P	63			88		
14	-29	AB	39	-99	P	64			89		
15	-35	P	40	-100	P	65			90		
16	-36	P	41			66			91		
17	-39	P	42			67			92		
18	-41	P	43			68			93		
19	-43	P	44			69			94		
20	-44	P	45			70			95		
21	-47	P	46			71			96		
22	-48	AB	47			72			97		
23	-49	P	48			73			98		
24	-55	P	49			74					
25	-60	P	50			75					


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 Tal. Tuljapur, Dist. Osmanabad.

Number of student present- 33 Number of students absent- 07 Total students- 40


 M.N. Goolbiny



Shikshan Prasarak Mandal, Anadur's

Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist- Osmanabad -413603

INTERNAL QUALITY ASSURANCE CELL

Year- 2018-19

Internal Evaluation 2018-2019

Date- 19/09/2018

Department of Mathematics

Present-Absent Report of Test/~~Examination~~ - I

Class: B.Sc-III

Semester: VI, Time:

Name of Paper: Real Analysis - I

Paper No. MAT-So Marks: 10

Name of Invigilator: Madhuri N. Gadsing

Roll number of present Students	Roll number of absent Students	Total
AC-04, 05, 06, 08, 11, 17, 18, 20, 22, 23, 24, 35, 36, 39, 41, 43, 44, 47, 49, 55, 60, 64, 68, 69, 70, 82, 89, 95, 94, 95, 96, 99, 100.	AC-01, 10, 29, 48, 62, 63, 76	40
Total present Students = 33	Total absent Students = 07	

Signature of Invigilator

Co-ordinator

Coordinator of Internal evaluation cell,
Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist. Osmanabad.

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Jawahar Arts, Science & Commerce
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Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Tutorial - I

Year- 2018-19

SEMESTER: V

Class: B.Sc. III

Subject: Mathematics

Paper No.: MAT-501

Date: / /

Name of the Paper: Real Analysis-I

Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1 Define $\{s_n\}_{n=1}^{\infty}$ diverges to L.

Hence prove that $\{1/n\}$ converges to zero.

05

Q. 2 Prove that a nondecreasing sequence which is bounded above is convergent.

05


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Anadur, Tq. Tuljapur, Dist- Osmanabad -413603



INTERNAL QUALITY ASSURANCE CELL

Internal Evaluation 2018-19

Department of Mathematics

Name of Teacher: Madhuri N. Gadsing

Class: B. Sc.III,


Semester: V,

Name of Paper: Real Analysis- I,

Paper No. :MAT-501,

Marks: Test-10, Tutorial -10, Total-20

Sr. No.	Roll. No	Test	Tutorial	Total	Sr. No.	Roll. No	Test	Tutorial	Total
1	AC-01	AB	AB	AB	31	AC-70	7	9	16
2	AC-04	7	8	15	32	AC-76	AB	8	8
3	AC-05	8	9	17	33	AC-82	6	9	15
4	AC-06	9	9	18	34	AC-89	8	9	17
5	AC-08	8	9	17	35	AC-93	9	10	19
6	AC-10	AB	8	8	36	AC-94	9	10	19
7	AC-11	8	9	17	37	AC-95	10	10	20
8	AC-17	8	8	16	38	AC-96	10	10	20
9	AC-18	9	9	18	39	AC-99	10	10	20
10	AC-20	8	9	17	40	AC-100	8	10	18
11	AC-22	9	9	18	41				
12	AC-23	8	8	16	42				
13	AC-24	8	9	17	43				
14	AC-29	AB	9	9	44				
15	AC-35	8	8	16	45				
16	AC-36	6	9	15	46				
17	AC-39	8	9	17	47				
18	AC-41	7	8	15	48				
19	AC-43	9	10	19	49				
20	AC-44	8	9	17	50				
21	AC-47	8	9	17	51				
22	AC-48	AB	8	8	52				
23	AC-49	9	9	18	53				
24	AC-55	8	9	17	54				
25	AC-60	7	9	16	55				
26	AC-62	AB	8	8	56				
27	AC-63	AB	AB	AB	57				
28	AC-64	9	10	19	58				
29	AC-68	8	8	16	59				
30	AC-69	8	9	17	60				


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JAWAHAR ARTS, SCIENCE & COMMERCE COLLEGE, ANADUR



TAL:- TULJAPUR, DIST:-OSMANABAD 2018-19

UNIT TEST: I (20 -20)

CLASS:- B.Sc- III

PAPER NO. MAT-502 MARK:- 10

PAPER NAME:- ~~Analysis~~ Ab-Algebra-I


NAME OF TEACHER:- M. N. Gadsing

DATE:- / /20 18-09-18

TIME:-

- Q.1. Define -
- Group
 - Subgroup
 - Abelian group
 - Cyclic group

If G is the set of all rational numbers other than 1 with binary operation $*$ defined by $a * b = a + b - ab$ for all $a, b \in G$. Show that $(G, *)$ is an abelian group.


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Anadur, Tq. Tuljapur, Dist- Osmanabad -413603**



INTERNAL QUALITY ASSURANCE CELL

Year 2018-19

Internal Evaluation 2018-2019

Date- 18/09/2018

Department of Mathematics

Presenty Report of Test/ ~~Test~~ I

Class: B.Sc. III, Semester: V, Name of Paper: Abstract Algebra- I

Paper No. : MAT-502 Marks

Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A
1	AC-01	AB	26	AC-63	AB	51			76		
2	-04	P	27	-64	P	52			77		
3	-05	P	28	-68	P	53			78		
4	-06	P	29	-69	P	54			79		
5	-08	P	30	-70	P	55			80		
6	-10	AB	31	-76	AB	56			81		
7	-11	P	32	-82	P	57			82		
8	-17	P	33	-89	AB	58			83		
9	-18	P	34	-93	P	59			84		
10	-20	P	35	-94	P	60			85		
11	-22	P	36	-95	P	61			86		
12	-23	P	37	-96	P	62			87		
13	-24	P	38	-99	P	63			88		
14	-29	AB	39	-100	AB	64			89		
15	-35	P	40	-62	AB	65			90		
16	-36	P	41			66			91		
17	-39	P	42			67			92		
18	-41	P	43			68			93		
19	-43	P	44			69			94		
20	-44	P	45			70			95		
21	-47	P	46			71			96		
22	-48	AB	47			72			97		
23	-49	P	48			73			98		
24	-55	P	49			74			99		
25	-60	P	50			75			100		

PRINCIPAL

Jawahar Arts, Science & Commerce
College Anadur,
Tal. Tuljapur, Dist. Osmanabad.

Number of student present- 31 Number of students absent- 09 Total students- 40

sign
M.N. Gadsing



Shikshan Prasarak Mandal, Anadur's

Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist- Osmanabad -413603

INTERNAL QUALITY ASSURANCE CELL

Year- 2018-19

Internal Evaluation 2018-2019

Date- 18/09/2018

Department of Mathematics

Present-Absent Report of Test/~~Tutorial~~ - I

Class: B.Sc.III

Semester: VI, Time:


Name of Paper: Abstract Algebra - I

Paper No. MAI-502 Marks: 10

Name of Invigilator: Madhuri N. Gadgil

Roll number of present Students	Roll number of absent Students	Total
AC-04, 05, 06, 08, 11, 17, 18, 20, 22, 23, 24, 35, 36, 39, 41, 43, 44, 47, 49, 55, 60, 64, 68, 69, 70, 82, 93, 94, 95, 96, 99	AC-01, 10, 29, 48, 62, 63, 76, 89, 100	60
Total present Students = 30	Total absent Students = 10	


Signature of Invigilator


Co-Ordinator
Internal Evaluation Cell
Coordinator of Internal evaluation cell
Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist. Osmanabad.


PRINCIPAL
Signature of Principal
Jawahar Arts, Science & Commerce
College, Anadur,
Tal. Tuljapur, Dist. Osmanabad.



Shikshan Prasarak Mandal's
Jawahar Arts, Science & Commerce College, Anadur
Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Tutorial - I

Year- 2018-19

SEMESTER: V

Class: B.Sc. III

Subject: Mathematics

Paper No.: MAT-502

Date: / /

Name of the Paper: Abstract Algebra-I

Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1 Define Group, Subgroup and Normal subgroup. Prove that the subgroup N of G is Normal subgroup of G if and only if every left coset of N in G is a right coset ON in G 05

Q.2 Define an associative ring, Field. Prove that a finite integral domain is a field. 05


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INTERNAL QUALITY ASSURANCE CELL

Internal Evaluation 2018-19

Department of Mathematics

Name of Teacher: Madhuri N. Gadsing

Class: B. Sc.III,

Semester: V,

Name of Paper: Abstract Algebra-I,

Paper No. :MAT-502,

Marks: Test-10, Tutorial -10, Total-20

Sr. No.	Roll. No	Test	Tutorial	Total	Sr. No.	Roll. No	Test	Tutorial	Total
1	AC-01	AB	AB	00	31	AC-70	8	9	17
2	AC-04	8	8	16	32	AC-76	AB	AB	00
3	AC-05	8	9	17	33	AC-82	6	10	16
4	AC-06	9	9	18	34	AC-89	AB	AB	00
5	AC-08	8	9	17	35	AC-93	9	10	19
6	AC-10	AB	8	8	36	AC-94	9	10	19
7	AC-11	8	9	17	37	AC-95	10	10	20
8	AC-17	8	8	16	38	AC-96	10	10	20
9	AC-18	9	10	19	39	AC-99	10	10	20
10	AC-20	8	9	17	40	AC-100	AB	AB	00
11	AC-22	10	9	19	41				
12	AC-23	8	8	16	42				
13	AC-24	8	9	17	43				
14	AC-29	AB	9	9	44				
15	AC-35	8	8	16	45				
16	AC-36	6	9	15	46				
17	AC-39	8	9	17	47				
18	AC-41	8	8	16	48				
19	AC-43	9	9	18	49				
20	AC-44	8	9	17	50				
21	AC-47	9	10	19	51				
22	AC-48	AB	8	8	52				
23	AC-49	9	9	18	53				
24	AC-55	8	9	17	54				
25	AC-60	7	9	16	55				
26	AC-62	AB	8	8	56				
27	AC-63	AB	AB	00	57				
28	AC-64	9	10	19	58				
29	AC-68	8	8	16	59				
30	AC-69	8	9	17	60				


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Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Unit Test - II

Year- 2018-19

SEMESTER: II

Class: B.Sc. I

Subject: Mathematics

Paper No.: MAT-201

Date: 16/02/2019

Name of the Paper: Integral Calculus

Marks:10

Note :- Figures to the right indicate full marks.

Q. 1. Evaluate:

05

$$\int \frac{dx}{(x-1)(x+1)(x+3)}$$

Q. 2. Obtain a reduction formula for $\int \sin^n x dx$,

05

Where n is positive integer. Hence evaluate $\int \sin^6 x dx$.

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Anadur, Tq. Tuljapur, Dist- Osmanabad -413603**



INTERNAL QUALITY ASSURANCE CELL

Year - 2018-19

Internal Evaluation 2018-2019

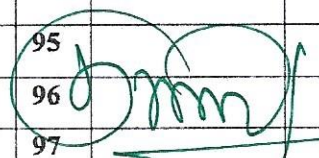
Date- 16/02/2019

Department of Mathematics

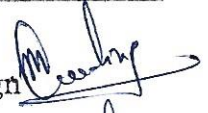
Presenty Report of Test/~~Final~~ II

Class: B.Sc-I, Semester: II, Name of Paper: Integral Calculus
Paper No.: MAI, 201 Marks

Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A
1	AA-05	P	26	AA-75	P	51			76		
2	-06	P	27	-76	AB	52			77		
3	-04	P	28	-78	P	53			78		
4	-09	P	29	-85	P	54			79		
5	-10	P	30	-88	P	55			80		
6	-17	AB	31	-89	P	56			81		
7	-18	P	32	-94	AB	57			82		
8	-22	P	33	-97	P	58			83		
9	-45	P	34	-102	P	59			84		
10	-66	P	35	-109	P	60			85		
11	-51	AB	36	-111	P	61			86		
12	-32	P	37	-115	P	62			87		
13	-40	P	38	-116	P	63			88		
14	-42	P	39	-122	AB	64			89		
15	-50	P	40	-124	AB	65			90		
16	-57	P	41	-125	P	66			91		
17	-58	P	42	-128	P	67			92		
18	-56	AB	43	-132	AB	68			93		
19	-59	P	44	-129	P	69			94		
20	-62	P	45	-13	AB	70			95		
21	-66	AB	46	-16	P	71			96		
22	-64	AB	47	-69	P	72			97		
23	-68	AB	48	-77	P	73			98		
24	-71	AB	49	-70	AB	74			99		
25	-74	P	50	-65	P	75			100		


PRINCIPAL
 Jawahar Arts, Science & Commerce
 College, Anadur,
 Tal. Tuljapur, Dist. Osmanabad.

Number of student present- 46 Number of students absent- 14 Total students- 50

sign 
 M.M. Gachling



Shikshan Prasarak Mandal, Anadur's

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Anadur, Tq. Tuljapur, Dist- Osmanabad -413603

INTERNAL QUALITY ASSURANCE CELL

Year 2018-19

Internal Evaluation 2018-2019

Date- 16/02/2019

Department of Mathematics

Present-Absent Report of Test/ ~~Exam~~ I

Class: B.Sc I

Semester: II, Time:

Name of Paper: Integral Calculus

Paper No. : , Marks: 10


Name of Invigilator: Madhuri N. Gadgil

MAT-201

Roll number of present Students	Roll number of absent Students	Total
AA - 05, 04, 06, 09, 10, 18, 22, 45, 46, 32, 40, 42, 50, 58, 57, 75, 62, 59, 65, 74, 78, 85, 88, 89, 97, 102, 109, 111, 115, 116, 125, 128, 129, 16, 69, 77	AA - 13, 17, 51, 56, 60, 64, 68, 70, 71, 76, 94, 122, 124, 132,	50
Total present Students = <u>36</u>	Total absent Students = <u>14</u>	


Signature of Invigilator


Co-Ordinator
Coordinator of Internal evaluation cell
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Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Tutorial - I

Year- 2018-19

SEMESTER: III

Class: B.Sc. II

Subject: Mathematics

Paper No.: MAT-302

Date: / /

Name of the Paper: Integral Transform

Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1 If $L[F(t)] = f(s)$ then prove that $L[e^{at}F(t)] = f(s - a)$ 05

Q.2 Define Beta and Gamma functions. Prove that $B(l, m) = B(m, l)$. 05

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INTERNAL QUALITY ASSURANCE CELL

Internal Evaluation 2018-19

Department of Mathematics

Name of Teacher: Madhuri N. Gadsing

Class: B. Sc.I,

Semester: II,

Name of Paper: Integral Calculus,

Paper No. :MAT-201,

Marks: Test-10, Tutorial -10, Total-20

Sr. No.	Roll. No	Test	Tutorial	Total	Sr. No.	Roll. No	Test	Tutorial	Total
1	AA-05	7	9	16	31	AA-85	6	9	15
2	AA-04	8	8	16	32	AA-88	8	10	8
3	AA-06	9	10	19	33	AA-89	7	9	16
4	AA-09	8	9	17	34	AA-94	AB	AB	00
5	AA-10	6	10	16	35	AA-97	6	9	15
6	AA-17	AB	AB	00	36	AA-102	7	9	16
7	AA-18	5	10	15	37	AA-109	8	10	18
8	AA-22	6	10	16	38	AA-111	7	10	17
9	AA-45	6	9	15	39	AA-115	6	8	14
10	AA-46	5	10	15	40	AA-116	5	9	14
11	AA-51	AB	AB	AB	41	AA-122	AB	AB	00
12	AA-32	6	10	16	42	AA-124	AB	AB	00
13	AA-40	7	10	17	43	AA-125	7	8	15
14	AA-42	8	9	17	44	AA-132	AB	AB	00
15	AA-50	8	9	17	45	AA-128	6	9	15
16	AA-58	9	10	19	46	AA-129	6	9	15
17	AA-57	8	10	18	47	AA-16	7	9	16
18	AA-75	7	10	17	48	AA-69	8	10	18
19	AA-56	AB	AB	AB	49	AA-77	7	10	17
20	AA-62	7	10	17	50	AA-13	AB	8	8
21	AA-59	8	10	18	51				
22	AA-65	7	9	16	52				
23	AA-60	AB	AB	AB	53				
24	AA-64	AB	AB	AB	54				
25	AA-68	AB	AB	AB	55				
26	AA-71	AB	AB	AB	56				
27	AA-70	AB	AB	AB	57				
28	AA-74	7	10	17	58				
29	AA-76	AB	10	10	59				
30	AA-78	6	10	16	60				

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Shikshan Prasarak Mandal's
Jawahar Arts, Science & Commerce College, Anadur
Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Unit Test - II

Year- 2018-19

SEMESTER: IV

Class: B.Sc. II

Subject: Mathematics

Paper No.: MAT-401

Date: 16/02/2019

Name of the Paper: Numerical Methods

Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1. Find a real root of the equation

$$f(x) = x^3 - x - 1 = 0$$

05

Q. 2. Find the missing term in the following table

x	0	1	2	3	4
y	1	3	9	-	81

05

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**Shikshan Prasarak Mandal, Anadur's
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Anadur, Tq. Tuljapur, Dist- Osmanabad -413603**



INTERNAL QUALITY ASSURANCE CELL

Year - 2018-19

Internal Evaluation 2018-2019

Date- 16/02/2019

Department of Mathematics

Presenty Report of Test/~~XXXXXX~~ II

Class: B.Sc-II, Semester: II, Name of Paper: Numerical Methods
Paper No. : MAT-201 Marks

Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A
1	AB-01	AB	26	AB-99	P	51			76		
2	-16	P	27	-100	P	52			77		
3	-19	P	28	-101	P	53			78		
4	-21	P	29	-102	AB	54			79		
5	-22	P	30	-112	P	55			80		
6	-28	P	31	-114	AB	56			81		
7	-33	P	32	-115	P	57			82		
8	-34	P	33	-116	P	58			83		
9	-37	P	34	-118	P	59			84		
10	-43	AB	35	-119	AB	60			85		
11	-45	P	36			61			86		
12	-49	AB	37			62			87		
13	-51	P	38			63			88		
14	-52	P	39			64			89		
15	-53	AB	40			65			90		
16	-55	P	41			66			91		
17	-61	P	42			67			92		
18	-62	P	43			68			93		
19	-72	P	44			69			94		
20	-73	P	45			70			95		
21	-83	AB	46			71			96		
22	-85	P	47			72			97		
23	-91	P	48			73			98		
24	-94	P	49			74			99		
25	-95	P	50			75			100		

PRINCIPAL
Jawahar Arts, Science & Commerce
College, Anadur,
Tal. Tuljapur, Dist. Osmanabad.

Number of student present-
27

Number of students absent-
08

Total students- 35

sign M.N. Gadsing
M.N. Gadsing



Shikshan Prasarak Mandal, Anadur's

Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist- Osmanabad -413603

INTERNAL QUALITY ASSURANCE CELL

Year - 2018-19

Internal Evaluation 2018-2019

Date- 16/02/2019

Department of Mathematics

Present-Absent Report of Test/ ~~Exam~~ - II

Class: B.Sc-II

Semester: IV, Time:

Name of Paper: Numerical Methods

Paper No. : _____, Marks: 10

Name of Invigilator: Madhuri N. Gadsing

MAT-401

Roll number of present Students	Roll number of absent Students	Total
AB-16, 19, 21, 22, 28, 33, 34, 37, 45, 51, 52, 55, 61, 62, 72, 73, 85, 91, 94, 95, 99, 100, 101, 112, 115, 116, 118,	AB - 01, 43, 49, 53, 83, 102, 114, 119	<u>35</u>
Total present Students = <u>27</u>	Total absent Students = <u>08</u>	

Signature of Invigilator

Coordinator of Internal evaluation cell
Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist- Osmanabad

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Shikshan Prasarak Mandal's
Jawahar Arts, Science & Commerce College, Anadur
Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Tutorial - I

Year- 2018-19

SEMESTER: IV

Class: B.Sc. II

Subject: Mathematics

Paper No.: MAT-401

Date: / /

Name of the Paper: Numerical Methods

Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1. Find a real root of the equation $f[x]=x^3-x-1=0$. 05

Q. 2. The following table is given. What is the form of the function?

x	0	1	2	5
y	2	3	12	147

05

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Shikshan Prasarak Mandal, Anadur's
Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist- Osmanabad -413603



INTERNAL QUALITY ASSURANCE CELL

Internal Evaluation 2018-19

Department of Mathematics

Name of Teacher: Madhuri N. Gadsing

Class: B. Sc.II,

Semester: IV,

Name of Paper: Numerical Methods,

Paper No. :MAT-401,

Marks: Test-10, Tutorial -10, Total-20

Sr. No.	Roll. No	Test	Tutorial	Total	Sr. No.	Roll. No	Test	Tutorial	Total
1	AB-01	AB	AB	00	31	AB-114	AB	AB	00
2	AB-16	8	9	17	32	AB-115	8	9	17
3	AB-19	8	9	17	33	AB-116	9	10	19
4	AB-21	7	9	16	34	AB-118	8	10	18
5	AB-22	7	10	17	35	AB-119	AB	AB	00
6	AB-28	6	8	14	36				
7	AB-33	9	10	19	37				
8	AB-34	9	10	19	38				
9	AB-37	6	8	14	39				
10	AB-43	AB	AB	00	40				
11	AB-45	6	9	15	41				
12	AB-49	AB	AB	00	42				
13	AB-51	7	8	15	43				
14	AB-52	8	9	17	44				
15	AB-53	AB	AB	00	45				
16	AB-55	9	8	17	46				
17	AB-61	8	8	16	47				
18	AB-62	7	9	16	48				
19	AB-72	10	10	20	49				
20	AB-73	8	10	18	50				
21	AB-83	AB	AB	20	51				
22	AB-85	7	8	15	52				
23	AB-91	7	9	16	53				
24	AB-94	6	10	16	54				
25	AB-95	8	10	18	55				
26	AB-99	5	9	14	56				
27	AB-100	5	10	15	57				
28	AB-101	6	10	16	58				
29	AB-102	AB	AB	00	59				
30	AB-112	7	8	15	60				

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Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell
Unit Test - II
Year- 2018-19
SEMESTER: IV

Class: B.Sc. II
Subject: Mathematics
Paper No.: MAT-402
Date: 16/02/2019 Name of the Paper: Partial Differential Equations
Marks: 10

Note :- Figures to the right indicate full marks.

- Q. 1 Apply Charpit's method to solve the equation $(p+q)(px+qy) = 1$ 05
- Q. 2 Solve $r+s-6t = y \cdot \cos x$. 05

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Anadur, Tq. Tuljapur, Dist- Osmanabad -413603**



INTERNAL QUALITY ASSURANCE CELL

Year: 2018-19

Internal Evaluation 2018-2019

Date- 16/02/2019

Department of Mathematics

Presenty Report of Test/ ~~XXXXXX~~ II

Class: B.Sc-IT, Semester: IV, Name of Paper: Partial Differential Equation
Paper No.: MAT-402 Marks

Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A
1	AB-01	AB	26	AB-99	P	51			76		
2	-16	P	27	-100	P	52			77		
3	-19	P	28	-101	P	53			78		
4	-21	P	29	-102	AB	54			79		
5	-22	P	30	-112	P	55			80		
6	-28	P	31	-114	AB	56			81		
7	-33	P	32	-115	P	57			82		
8	-34	P	33	-116	P	58			83		
9	-37	P	34	-118	P	59			84		
10	-42	AB	35	-119	AB	60			85		
11	-45	P	36			61			86		
12	-49	AB	37			62			87		
13	-51	P	38			63			88		
14	-52	P	39			64			89		
15	-53	AB	40			65			90		
16	-55	P	41			66			91		
17	-61	P	42			67			92		
18	-62	P	43			68			93		
19	-72	P	44			69			94		
20	-73	P	45			70			95		
21	-83	AB	46			71			96		
22	-85	P	47			72			97		
23	-91	P	48			73			98		
24	-94	P	49			74			99		
25	-95	P	50			75			100		

Principal
Jawahar Arts, Science & Commerce
College, Anadur
Tal. Tuljapur, Dist. Osmanabad.

Number of student present- 33 Number of students absent- 08 Total students- 35

sign M. N. Gadling
M. N. Gadling



Shikshan Prasarak Mandal, Anadur's

Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist- Osmanabad -413603

INTERNAL QUALITY ASSURANCE CELL

Year - 2018-19

Internal Evaluation 2018-2019

Date- 16/02/2019

Department of Mathematics

Present-Absent Report of Test/~~Tutorial~~ - II

Class: B.Sc-II

Semester: IV, Time:

Name of Paper: Partial Differential Eq


Paper No. : _____, Marks: 10

Name of Invigilator: _____

MAT-402

Roll number of present Students	Roll number of absent Students	Total
AB-16, 19, 21, 22, 28, 33, 34, 37, 45, 51, 52, 55, 61, 62, 72, 73, 85, 91, 94, 95, 99, 100, 101, 112, 115, 116, 118.	AB-01, 43, 49, 53, 83, 102, 114, 119	35
Total present Students = 27	Total absent Students = 08	


Signature of Invigilator


Coordinator of Internal Evaluation cell
Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist. Osmanabad,


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Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Tutorial - I

Year- 2018-19

SEMESTER: IV

Class: B.Sc. II

Subject: Mathematics

Paper No.: MAT-402

Date: / / Name of the Paper: Partial Differential Equations

Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1 Solve $r+5s+6t=0$

05

Q. 2 Solve $(D - 1)(D + D' - 1)z = \sin(x + 2y)$

05

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INTERNAL QUALITY ASSURANCE CELL

Internal Evaluation 2018-19
Department of Mathematics

Name of Teacher: Madhuri N. Gadsing

Class: B. Sc.II, Semester: IV,

Name of Paper: Partial Differential Equations,

Paper No. :MAT-402,

Marks: Test-10, Tutorial -10, Total-20

Sr. No.	Roll. No	Test	Tutorial	Total	Sr. No.	Roll. No	Test	Tutorial	Total
1	AB-01	AB	AB	00	31	AB-114	AB	AB	00
2	AB-16	7	10	17	32	AB-115	10	10	20
3	AB-19	8	10	18	33	AB-116	9	10	19
4	AB-21	7	10	17	34	AB-118	9	10	19
5	AB-22	6	9	15	35	AB-119	AB	AB	00
6	AB-28	5	9	14	36				
7	AB-33	8	10	18	37				
8	AB-34	9	10	19	38				
9	AB-37	9	10	19	39				
10	AB-43	AB	AB	00	40				
11	AB-45	10	10	20	41				
12	AB-49	AB	AB	00	42				
13	AB-51	10	9	19	43				
14	AB-52	9	9	18	44				
15	AB-53	AB	AB	00	45				
16	AB-55	10	10	20	46				
17	AB-61	10	10	20	47				
18	AB-62	9	9	18	48				
19	AB-72	10	9	19	49				
20	AB-73	10	10	20	50				
21	AB-83	AB	AB	00	51				
22	AB-85	9	10	9	52				
23	AB-91	10	10	20	53				
24	AB-94	10	9	19	54				
25	AB-95	9	9	18	55				
26	AB-99	8	10	18	56				
27	AB-100	8	10	18	57				
28	AB-101	10	10	20	58				
29	AB-102	AB	AB	00	59				
30	AB-112	10	10	20	60				

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Internal Evaluation Cell
Unit Test - II
SEMESTER: VI
Year- 2018-19

Class: B.Sc. III
Date: 15/02/2019
Subject: Mathematics
Name of the Paper: Real Analysis-II
Paper No.: MAT-601
Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1 If f is a continuous function on the closed bounded interval $[a,b]$ and if $\varphi'(x) = f(x)$ ($a \in [a, b]$) then prove that $\int_a^b f(x) dx = \varphi(b) - \varphi(a)$. 05

Q. 2 If the subset A of the metric space $\langle M, \rho \rangle$ is totally bounded, then A is bounded. 05

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INTERNAL QUALITY ASSURANCE CELL

Year 2018-19

Internal Evaluation 2018-2019

Date- 15/02/2019

Department of Mathematics

Presenty Report of Test/~~Test~~ - II

Class: B.Sc. III, Semester: VI, Name of Paper: Real Analysis - II
Paper No. : MAT-601 Marks

Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A	Sr. No.	Roll. No	P/A
1	AC-01	P	26	AC-62	AD	51			76		
2	-04	P	27	-63	AB	52			77		
3	-05	P	28	-64	P	53			78		
4	-06	P	29	-68	P	54			79		
5	-08	P	30	-69	P	55			80		
6	-10	AR	31	-70	P	56			81		
7	-11	P	32	-76	AB	57			82		
8	-17	P	33	-82	P	58			83		
9	-18	P	34	-89	AB	59			84		
10	-20	P	35	-93	P	60			85		
11	-22	P	36	-94	P	61			86		
12	-23	P	37	-95	P	62			87		
13	-24	P	38	-96	P	63			88		
14	-29	AB	39	-99	P	64			89		
15	-35	AB	40	-100	AB	65			90		
16	-36	P	41			66			91		
17	-39	P	42			67			92		
18	-41	P	43			68			93		
19	-43	P	44			69			94		
20	-44	P	45			70			95		
21	-47	P	46			71			96		
22	-48	AB	47			72			97		
23	-49	P	48			73			98		
24	-55	P	49			74					
25	-60	P	50			75					

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Number of student present-

31

Number of students absent-

09

Total students- 40

sign
M. M. Gaudsing



Shikshan Prasarak Mandal, Anadur's

Jawahar Arts, Science & Commerce College,
Anadur, Tq. Tuljapur, Dist- Osmanabad -413603

INTERNAL QUALITY ASSURANCE CELL

Year: 2018-19

Internal Evaluation 2018-2019

Date- 15/02/2019

Department of Mathematics

Present-Absent Report of Test/~~Internal~~ - II

Class: B.Sc. II

Semester: VI, Time:

Name of Paper: Real Analysis - II

Paper No. MAT-601 Marks: 10


Name of Invigilator: Madhuri N. Gadsing

Roll number of present Students	Roll number of absent Students	Total
AC- 04, 05, 06, 08, 10, 17, 18, 20, 22, 23, 24, 36, 39, 41, 43, 44, 47, 49, 55, 60, 64, 68, 69, 70, 82, 93, 94, 95, 96, 99, 100 .	AC- 01, 10, 29, 35, 48, 62, 63, 76, 89, 100	40
Total present Students = 30	Total absent Students = 10	

Signature of Invigilator


Co-Ordinator

Coordinator of Internal evaluation cell
Jawahar Arts, Science & Commerce College,
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Signature of Principal
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Taluka- Tuljapur, Dist: Osmanabad



Internal Evaluation Cell

Tutorial - I

Year- 2018-19

SEMESTER: VI

Class: B.Sc. III

Subject: Mathematics

Paper No.: MAT-601

Date: / /

Name of the Paper: Real Analysis-II

Marks: 10

Note :- Figures to the right indicate full marks.

Q. 1. Let f be a continuous function from a metric space M_1 into a metric space M_2 . If M_1 is connected, then prove that the range of f is also connected.

05

Q. 2. Define connected set, compact set and complete set. Prove that the metric space (M_1, ρ_1) is compact if and only if every sequence of points in M has a subsequence converging to a point in M .

05

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INTERNAL QUALITY ASSURANCE CELL

Internal Evaluation 2018-19

Department of Mathematics

Name of Teacher: Madhuri N. Gadsing

Class: B. Sc.III,

Semester: VI,

Name of Paper: Real Analysis- II,

Paper No. :MAT-601,

Marks: Test-10, Tutorial -10, Total-20

Sr. No.	Roll. No	Test	Tutorial	Total	Sr. No.	Roll. No	Test	Tutorial	Total
1	AC-01	AB	AB	00	31	AC-70	5	10	15
2	AC-04	8	10	18	32	AC-76	AB	AB	AB
3	AC-05	8	9	17	33	AC-82	6	9	15
4	AC-06	9	9	18	34	AC-89	AB	AB	AB
5	AC-08	8	9	17	35	AC-93	9	10	19
6	AC-10	AB	8	8	36	AC-94	9	10	19
7	AC-11	8	9	17	37	AC-95	10	10	20
8	AC-17	8	10	18	38	AC-96	10	10	20
9	AC-18	9	9	18	39	AC-99	10	10	20
10	AC-20	8	10	18	40	AC-100	AB	AB	AB
11	AC-22	9	9	18	41				
12	AC-23	8	10	18	42				
13	AC-24	8	9	17	43				
14	AC-29	AB	9	9	44				
15	AC-35	AB	AB	AB	45				
16	AC-36	6	9	15	46				
17	AC-39	8	9	17	47				
18	AC-41	7	8	15	48				
19	AC-43	9	9	18	49				
20	AC-44	8	9	17	50				
21	AC-47	8	9	17	51				
22	AC-48	AB	8	8	52				
23	AC-49	9	9	18	53				
24	AC-55	8	9	17	54				
25	AC-60	7	9	16	55				
26	AC-62	AB	8	8	56				
27	AC-63	AB	AB	AB	57				
28	AC-64	9	10	19	58				
29	AC-68	8	8	16	59				
30	AC-69	8	9	17	60				

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