

# MATHEMATICS

The BOS of mathematics meeting is held at 11:00 AM on 7/10/2015. Under the Chairmanship of Dr. A. Arunkumar, HOD of mathematics to discuss the following agenda.

1. Approval of Syllabus.
2. Approval of model question paper.
3. Approval of panel of Examiners.
4. Any other.

Members attended:

- |    |                       |              |    |
|----|-----------------------|--------------|----|
|    | Dr. N. Krishnaleddy.  | Univ nominee | NR |
| 1. | Dr. A. Arun Kumar.    | Chairman.    | NR |
| 2. | K. Srinivas.          | member.      | NR |
| 3. | R. Sathyanarayana Rao | member.      | NR |
| 4. | V. Naga Lakshmi       | member.      | NR |
| 5. | M. Vijaya.            | member.      | NR |

The chairman Dr. A. Arun Kumar, has given opening remarks of the BOS and explained the concept of Autonomous.

At first K. Srinivas asked to divide the syllabus in to four units.

R. Sathyanarayana Rao opined that there must be four units in each semester and questions may be given from each unit equally. The other members are also expressed the same opinion.

The following resolutions taken place

1. All the members unanimously approved the syllabus.
2. Differential equations consists of two units.  
Solid geometry of consists of two units.

2. Each Semester consists of 50 marks.  
10M for Internal Examination and  
40M for External Examination (Semester Examination)
3. pattern of Examination.

The members decided the following model paper

Part-A consists of 8 questions set in 2 questions from each unit. Student should answer the 4 questions out of 8 questions. Each question carries 3 marks. (4x3=12M.)

Part-B consists of 4 sections.

Each section consists of 2 questions and the student is asked to answer 4 questions choosing one question from each section.

Each question carries 7 marks. (4x7=28M.)

The following panel of Examiners is approved.

1. B. Venkateswarlu, GDC Sattupally, KMM
2. Kavitha, GDC Sattupally, KMM.
3. C. Srinivas Reddy, GDC, Mulugu Warangal.
4. Sambasivarao, GDC, Bhadrachalam, KMM.
5. Padma, GDC, Kothagudem, KMM.
6. Cranganah, GDC, MNCL, AB.
7. Komaravish, GDC Narosampet, Warangal
8. V. Sanjay RJC, KMM.
9. Shanthipriya KMDC, KMM.
10. Padma, KMDC, KMM.

### Signatures and names of BOS members

- |    |                        |              |                         |
|----|------------------------|--------------|-------------------------|
|    | Dr. N. Krishna Reddy   | Univ nominee | <del>NKR</del>          |
| 1. | Dr. T. Arun Kumar      | Chairman.    | <del>AKM</del> 11/10/15 |
| 2. | K. Srinivas.           | Member.      | <del>KS</del> 11/10/15  |
| 3. | R. Sathyamarayana Rao. | Member.      | <del>RS</del>           |
| 4. | U. Naga Lekha Rani.    | Member.      | <del>UNL</del> 11/10/15 |
| 5. | M. Vijaya              | Member.      | <del>MV</del> 11/10/15  |

The Board of studies of mathematics meeting is held at 11:00 am on 16.09.2016 Under the chairmanship of Dr. T. Arunkumar HOD of Mathematics to discuss the following agenda.

1. Approval of Syllabus
2. Approval of model question papers.
3. Approval of pannel of examiners.
4. Any other matter.

#### Members attended:

- |                         |               |                     |
|-------------------------|---------------|---------------------|
| 1. Dr. N. Krishna Reddy | univ. nominee | N Krishna           |
| 2. Dr. T. Arunkumar     | chairman      | T Arun              |
| 3. K. Srinivas          | member        | K Srinivas          |
| 4. R. Satyanarayana Rao | member        | R Satyanarayana Rao |
| 5. P. Anuradha          | member        | P Anuradha          |
| 6. U. Nagarekharani     | member        | U Nagarekharani     |

The chairman Dr. T. Arunkumar has given opening remarks of the Board of studies and suggested to divide the 3<sup>rd</sup> and 4<sup>th</sup> semester syllabus under "non-CBCS" to four (4) units, and questions may be given from each unit equally. The other members are also express the same opinion.

→ The following resolution taken place.

- ① All the members unanimously approved the syllabus "Abstract Algebra" for 3<sup>rd</sup> semester and "Real Analysis" for 4<sup>th</sup> semester.
- ② Each semester consist of 50 marks.  
10 marks for internal examination and 40 marks for external examination (semester end examination) and practical examination consist of 50 marks.

- ③ pattern of examination for semester and examination:

The members decided the following model paper

part A:

consist of 8 questions setting 2 questions from each unit, student should answer the following four questions out of 8 questions, each question carries 3 marks.  $(4 \times 3 \text{ mar} = 12 \text{ marks})$

Part B:

consist of 4 <sup>sections</sup> questions. Each section consist of 2 questions and the student is asked to answer four questions choosing one question from each section. each question carries 7 marks.  $(4 \times 7 \text{ m} = 28 \text{ m})$

- ④ Pattern of examination for internal examinations:

college will conduct two internals in this average of two internal marks will be posted in their marks memo.

- ⑤ pattern of practical examination:

In this 8 questions are to be set out of which 4 questions has to be answered, each question carries  $7\frac{1}{2}$  marks.  $(4 \times 7\frac{1}{2} \text{ m} = 30 \text{ marks})$  viva carries 10 marks, and record carries 10 marks.

CBCS Syllabus and question paper pattern for I year

The ~~Per~~ B.Sc I year CBCS syllabus is approved as per the university prescribed syllabus which was uploaded in the KAKATIYA UNIVERSITY website.

The committee approved the question paper pattern of Theory and practical examination for 1<sup>st</sup> and 2<sup>nd</sup> semester. Each semester consist of 80 marks, and 20 marks for internals. The practical examination will be conducted at the end of academic year for 100 marks.

①. pattern of examination :

Each question paper shows two parts.

In part-I 8 questions are to be set out which 6 questions are to be answered. each question carries 4 marks. (6x4m = 24 marks)

Part-II consist of 4 ~~question~~ sections, 2 questions are to be given 'Settling 2' questions from each section and student is asked to answer four questions choosing one from each section. each question carries 14 marks. (4x14mar = 56 marks)

Therefore the total marks are "80" for theory examinations.

②. pattern of Internal examination :

20 marks are allocated for internals. two internals are to be conducted, each internal consist of 20 marks. the average of two internals marks are to be posted in their student marks memo.

### ③ Syllabus and pattern of practical examination:

The practical examination syllabus consist of 8 units. (Semester-I consists of 4 units, semester-II consist of 4 units).

The practical examination consist of two sections that is Section-A, and Section-B.

5 questions are to be set in section-A from 1<sup>st</sup> semester syllabus, another 5 questions are to be set in section-B from 2<sup>nd</sup> semester syllabus. student is asked to answer 6 questions choosing 2 from each section. Each question carries 10 marks. ( $6 \times 10 = 60$  marks). For record 20 marks are allocated and for viva voce 20 marks are allocated.

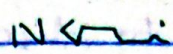
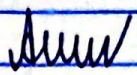
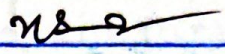

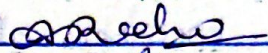

Therefore the total number of marks allocated are 100.

The following panel of examiners are approved.

1. B. Venkateswarlu, GDC Sathupally, KMM
2. Kavitha, GDC Sathupally, KMM
3. C. Srinivas Reddy, GDC Mulugu, Warangal
4. Sambasiva Rao, GDC Bhadrachalam, KMM
5. Padma, GDC Kothagudem, KMM
6. Gangaiah, GDC Marchireyal, Adb.
7. Komaraiah, GDC Narsampet, Warangal.
8. V. Sanjay R.J.C KMM.
9. Shanti priya KMDC KMM.
10. Padma KMDC, KMM.



Signatures and names of Board of Studies members :

- 1. DR. N. Krishna Reddy Univ. nominee 
- 2. ~~K. Srinivasa~~
- 2- DR. T. Arunkumar chairman 
- 3. K. Srinivasa member 
- 4. R. Satyanarayana Rao member 
- 5. P. Anuradha member 
- 6. U. Nagarekha Rani Member 

The Board of Studies of Mathematics meeting is held at 11.00 am on 03-07-2017 under the chairmanship of Dr. T. Arun Kumar HOD of Mathematics to discuss the following agenda.

1. Approval of Syllabus.
2. Approval of model question papers.
3. Approval of panel of Examiners.
4. Any other matter.

members attended:

- |                           |                |     |
|---------------------------|----------------|-----|
| 1. Dr. N. Krishna Reddy.  | Univ. nominee. | NKR |
| 2. Dr. T. Arun Kumar      | Chairman.      | AK  |
| 3. K. Srinivas.           | member.        | KS  |
| 4. R. Sathyasudhakar Rao. | "              | RS  |
| 5. U. Naga Rekha Devi.    | "              | UR  |
| 6. R. Nagaraju            | "              | NR  |

The chairman Dr. T. Arun Kumar has given opening remarks of the Board of studies and suggested to divide the V<sup>th</sup> and VI<sup>th</sup> semester syllabus under 'non-BCS' to four units and questions may be given from each unit equally. The other members are also express the same opinion.

→ the following resolution taken place.

i. Semester V consists of two papers paper V and VI.

i.e. paper V is Linear Algebra, and

paper VI is Methods of Numerical Analysis.

ii. Semester VI consists of two papers paper VII and VIII

i.e. paper VII is Vector Calculus, and

paper VIII is Numerical Analysis.

All the members unanimously approved the above

mentioned syllabus. Each semester consists of 50 marks. 10 marks for internal Examination, and 40 marks for Semester end examination. and practical examination consist of 50 marks.

### pattern of examination for Semester and examination.

The members decided the following model papers.

#### part-A:

consists of 8 questions setting 2 questions from each unit. student should answer the four questions out of 8 questions. each question carries 3 marks. ( $4 \times 3 = 12m$ )

#### part-B:-

consists of 4 sections. each section consist of 2 questions and the student is asked to answer four questions choosing one question from each section. each question carries 7 marks. ( $4 \times 7 = 28m$ )

### pattern of examination for internal Examination:

college will conduct two internals in this average of two internal marks will be posted in their marks memo.

### Pattern of practical Examination:-

In this 8 questions are to be set out of which 4 questions has to be answered each question carries  $7\frac{1}{2}$  marks. ( $4 \times 7\frac{1}{2} = 30m$ ). viva carries 10 marks, and record carries 10 marks.

## CBCS Syllabus and question paper pattern for II<sup>nd</sup> year and 3<sup>rd</sup> year

The B.Sc II<sup>nd</sup> year CBCS syllabus is approved as per the University prescribed syllabus which was uploaded in the 'Kakatiya' University website.

The committee approved the question paper pattern of theory and practical examination for III<sup>rd</sup> and IV<sup>th</sup> semester. Each semester consists of 80 marks, and 20 marks for internals. The practical examination will be conducted at the end of academic year for 100 marks. All the members unanimously approved the syllabus. Semester III for 'Real Analysis' and Semester IV for 'Algebra'.

### Pattern of Examination:-

Each question paper shows two parts. In part-I 8 questions are to be set out which 6 questions are to be answered. Each question carries 4 marks (6x4=24).

Part-II consists of 4 sections, 8 questions are to be given setting 2 questions from each section and student is asked to answer four questions choosing one from each section. Each question carries 14 marks (4x14=56). Therefore the total marks are 80 marks for theory examination.

### Pattern of Internal Examination:-

20 marks are allocated for internals. Two internals are to be conducted, each internal consists of 20 marks. The average of two internal marks are to be putted in their student marks memo.

### Syllabus and pattern of practical examination:-

The practical examination syllabus consist of

8 units. (Semester-III consists of 4 units, Semester IV consist of 4 units).

The practical Examination consist of two sections that is section-A and section-B.

5 questions are to be set in section-A from III semester syllabus, another 5 questions are to be set in section-B from IV semester syllabus. Student is asked to answer 6 questions choosing 2 from each section. Each question carries 10 marks ( $6 \times 10 = 60m$ ). For record 20 marks are allocated and for viva 20 marks are allocated.

Therefore the total number of marks allocated are 100.

The following pannel of examiners are approved.

1. B. Venkateswarlu, GDC Sathupally, Kmm.
2. Kavitha, GDC Sathupally, Kmm.
3. C. Srinivas Reddy, GDC mulugu, Warangal.
4. Sambasiva Rao, GDC Bhadrachalam
5. Padma, GDC Kottagudem, Kmm.
6. Changaiah, GDC Manchireyal, Adb.
7. Komaraiiah, GDC Narasampet, Warangal.
8. V. Sanjay, R.T.C Kmm.
9. Shanti priya, KMDC, Kmm
10. padma, KMDC, Kmm.

Signatures and names of Board of studies members:

- |                         |                |     |
|-------------------------|----------------|-----|
| 1. Dr. N. Krishnareddy  | univ. nominee. | NKr |
| 2. Dr. T. Arun Kumar    | chairman       | AKK |
| 3. K. Srinivas          | member.        | KS  |
| 4. R. Satyanarayana Rao | member.        | RS  |
| 5. U. Naga Racha Rami.  | member.        | UR  |
| 6. R. Naga raja         | member.        | NR  |

Notice

Dt: 10-08-2018

It is to inform that the Board of studies of mathematics Meeting will be hold on 13.08.2018 at 2.00PM in Department of mathematics under the chairmanship of V. Sambasiva Rao, H.O.D, mathematics to discuss the following agenda,

1. Approval of V and VI semester syllabus (CBCS)
2. Approval of panel of examiners.
3. Any other matter

All the members of Board of studies are requested without fail

1. Dr. N. Krishna Reddy University Nominee NKV
2. V. Sambasiva Rao chairman ~~MS~~
3. R. Sathyanarayana Rao member
4. K. Narasimha Rao member K. Narasimha Rao
5. K. Sreenivas member MS
6. B. Venkateswara Rao member. MS

2018-19

dt: 13.08.2018

16 MINUTES OF THE MEETING

The Board of studies of Mathematics meeting is held at 11.30 AM on 13.08.2018 at Dept. of Mathematics, under the chairmanship of V. Sambasiva Rao, H.O.D of Mathematics to discuss the following agenda.

1. Approval of Final year V and VI Semester syllabus
2. Approval of Panel of ~~Examinations~~ Examiners.
3. Any other matter.

Members attended:

1. Dr. N. Krishna Reddy University Nominee NKri
2. V. Sambasiva Rao chairman ~~Chairman~~
3. R. Satyanarayana Rao Member ~~Member~~
4. K. Narashima Rao Member K. Narashima Rao
5. K. Srinivas Member K. Srinivas
6. B. Venkateswara Rao Member B. Venkateswara Rao

The chairman V. Sambasiva Rao has given opening remarks of the Board of studies about the syllabus of III year V and VI semester syllabus which is introduced by "Council of Higher Education", Telangana state.

V Semester: Compulsory Paper:

Linear Algebra

Text Book: David C Lay, Linear Algebra and its Applications.

VI: Elective Paper: Solid Geometry

DSE-IE/ABSS/16

Text Book: Shanti Narayan and P. K. Mittal

Analytical Solid Geometry

VI: Semester:

Compulsory Paper: Numerical Analysis

DSE IPASS/16

Text Book: Richard L. Burden and Douglas Fairweather

~~Numerical Methods for Scientific and Engineering Comp~~  
Numerical Analysis (9e)

V: Elective Paper: Vector Calculus

Text: P. C. ~~Math~~ Matthews, Vector Calculus.

All the members are unanimously approved the above syllabus for V & VI Semesters.

Theory <sup>Pattern</sup> ~~Paper~~ for V and VI Semesters:

Each Semester Consists 80 marks for Theory Examination and 20 marks for Internal Examination. 50 Marks for each Practical Semester Papers.

Theory:

Each question Paper having two (2) Parts.

Part I: 8 (Eight) questions are to be set and 6 (Six) questions should be answer by students. Each carries 4 marks  
 ie  $6 \times 4 = 24$  Marks)

Part: II Having 4 (sections, A, B, C and D)

Each Section Contains 2 questions (Unitwise)

Section A: Unit I 1 and 2 questions

Section B: Unit II 3 and 4 "

Section C: Unit III 5 and 6 "

Section D: Unit IV 7 and 8 "

The student's should answer Four (4) questions selecting one from Each Section. Each question carries 14 marks

ie  $(14 \times 4 = 56M)$

Pattern of Internal Examination:

20 marks are allocated for internal. Two internal are to be conducted, each internal for 20 marks. The average of two internal marks are to be Pasted in their Marks Memo.



### Practical Examination:

For each semester the Practical question Paper consist of 5 questions (Five). The student should answer any three (3) questions:  $3 \times 10 = 30$  marks

Record: 10 Marks

Viva: 10 Marks

Total: 50 marks

All the above resolutions are taken by Unanimously by University Nominee and all the members of B.O.S


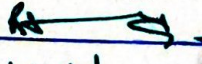
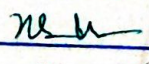
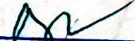
All are approved the above syllabus for V & VI Semesters Examination Paper Pattern for Theory, Internal and Practicals.

The members of B.O.S are also approved the below Panel of Examiners List.

S.No	Name	Working place
1.	M-Venu Gopal	Kakatiya Govt. Degree College, Hanumkonda
2	D. Venkanna	K. D. C Hanumkonda
3	Dr. S. Prasanna Rani	Govt. Degree College (W), Warangal
4	Dr. D. Pusha	ABV Govt. Degree College, Janajanon
5.	A. Satyanarayana	"
6.	B. Elizabeth Rani	Govt. Degree College (W), Karimnagar
7.	Bolla Saide Reddy	KRR Govt. Degree College, Kodada
8.	Dr. Margam Archanu	SRR Govt. Degree College, Karimnagar
9.	E. Komuraiah	SRR Govt. Degree College, Karimnagar
10.	D. Pavankumar	"
11.	R. Nagaraju	Govt. Degree College, Manuguru
12.	Ramesh Reddy	S. D. C Adilabad
13.	B. Saritha	G. D. C Sathupally
14.	P. Srinivas	GDC Palvancha

15. M. Harinath PriyadarSini Degree college, Khammam  
 16. V. Sanjay RJC Degree college Khammam  
 17. P. Padma Kavitha Memorial Degree College, Khammam  
 18. T. Arun Kumar G.D.C. - Nirmal  
 19. R. Sathyanarayana G.D.C. (w) Khammam  
 20. K-Narasimha Rao "  
 21. B. Madhavi Pingle Degree college, Warangal  
 22. R. Rudrani G.D.C Rangasai Peta  
 23. S. Jai Prasad G.D.C Metpally

### Signatures and names of Board of Studies members

1. Dr. N. Krishna Reddy University nominee NKri  
 2. V. Sambasiva Rao Chairman   
 3. R. Satyanarayana Rao Member   
 4. K-Narasimha Rao Member K. Narasimha Rao  
 5. K-Srinivas Member   
 6. B. Venkateswara Rao Member 

# Board of Studies Meeting

2019-20

21/08/19


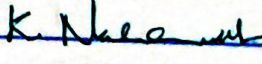


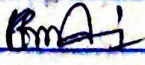
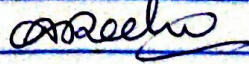
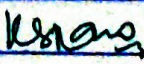
## NOTICE

It is to inform that the Board of studies of Mathematics meeting will be held on 13.08.2019 at 2.00 PM in the Department of Mathematics. The meeting will be chaired by Head of the Dept., Mathematics.

### Agenda :-

1. Approval of I and II semester syllabus (CBCS)
2. Approval of panel of Examiners
3. Any other relevant matter.

All the members of Board of studies are requested to attend the meeting without fail.

1. Dr. N. Krishna Reddy University Nominee
2. V. Sambasiva Rao Chairman 
3. ~~R~~ M. Venugopal Member
4. K. Narasimha Rao Member 
5. B. Venkateswara Rao Member 
6. K. Srinivas Member 
7. K. Jyothirmai Rani Member 
8. P. Anuratha Member 
9. Sri. Koddepalli Srinani member   
Dit's Employment officer

## MINUTES OF THE MEETING

Date: 13/08/19

The Board of studies of ~~meeting~~ Mathematics meeting is held on 13-08-2019 at 2.30 PM at Department of Mathematics, under the chairmanship of V. Sambasiva Rao H.O.D of Mathematics to discuss the following agenda.

1. Approval of I year I-Semester and II-Semester Syllabus from the academic year 2019-20 onwards
2. Approval of Panel of Examiners.
3. Any other matter.

## Members Attended:

- |                          |                    |           |
|--------------------------|--------------------|-----------|
| 1. Dr. N. Krishna Reddy  | University Nominee |           |
| 2. V. Sambasiva Rao      | Chairman           |           |
| 3. M. Venugopal          | Member             |           |
| 4. K. Navasimha Rao      | Member             | K. Nazeem |
| 5. B. Venkateswara Rao   | Member             | MV        |
| 6. K. Srinivas           | Member             | KS        |
| 7. K. Jaythirmai Rani    | Member             | JKR       |
| 8. P. Anuvadha           | Member             |           |
| 9. Sri Kondapalli Sairam | Member             |           |
- The District Employment Officer  
Khammam.

The chairman V. Sambasiva Rao has given opening remarks of the Board of studies about the new syllabus of B.Sc I year - Semester - I and Semester - II, which are introduced by "Council of Higher Education" of Telangana State from the academic year 2019-2020 onwards.

I. Semester - Differential Calculus and Integration

Text Books: Differential Calculus.

Shanti Navayon, P.K. Mittal, S. Chand  
New Delhi.

Integral Calculus - Shanti Narayan, S. Chand, New Delhi.

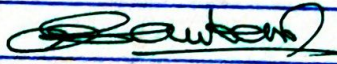
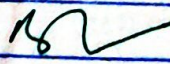
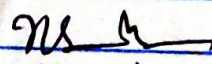
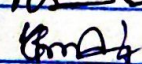
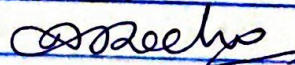
II Semester      Differential Equations.

Text Book: Zahir Ahsan, Differential Equations and Their Applications.

All the members are Unanimously Approved the above Syllabus of I-Semester and II Semester of I.B.Sc from the academic year 2019-20.

The Board of Studies members are also approved the following Panel of Examiners list.

Signatures and name of Board of Studies members.

- |                             |                    |  |
|-----------------------------|--------------------|--|
| 1. Dr. N. Krishna Reddy,    | University Nominee |  |
| 2. V. Sambasiva Rao         | H.O.D & Chairman   |  |
| 3. M. Venugopal             | Member             |  |
| 4. K. Narasima Rao          | Member             | K. Narasimha Rao   |
| 5. B. Venkateswara Rao      | Member             |  |
| 6. K. Srinivas              | Member             |  |
| 7. K. Joythirmai Rani       | Member             |  |
| 8. P. Anuradha              | Member             |  |
| 9. Sri Kondapalli Sriyam    | Member.            |  |
| District Employment Officer | Khammam            | K. Sriyam  |

SEMESTER-I

2.1 Differential and Integral Calculus

DSC-1A

BS:101

Theory: 5 credits and Tutorials: 0 credits  
Theory: 5 hours /week and Tutorials: 1 hours /week

**Objective:** The course is aimed at exposing the students to some basic notions in differential calculus.

**Outcome:** By the time students complete the course they realize wide ranging applications of the subject.

Unit- I

**Partial Differentiation:** Introduction - Functions of two variables - Neighbourhood of a point  $(a, b)$  - Continuity of a Function of two variables, Continuity at a point - Limit of a Function of two variables - Partial Derivatives - Geometrical representation of a Function of two Variables - Homogeneous Functions.

Unit- II

**Theorem on Total Differentials - Composite Functions - Differentiation of Composite Functions - Implicit Functions - Equality of  $f_{xy}(a, b)$  and  $f_{yx}(a, b)$  - Taylor's theorem for a function of two Variables - Maxima and Minima of functions of two variables - Lagrange's Method of undetermined multipliers.**

Unit- III

**Curvature and Evolutes:** Introduction - Definition of Curvature - Radius of Curvature - Length of Arc as a Function, Derivative of arc - Radius of Curvature - Cartesian Equations - Newtonian Method - Centre of Curvature - Chord of Curvature.

**Evolutes:** Evolutes and Involutes - Properties of the evolute.

**Envelopes:** One Parameter Family of Curves - Consider the family of straight lines - Definition - Determination of Envelope.

Unit- IV

**Lengths of Plane Curves:** Introduction - Expression for the lengths of curves  $y = f(x)$  - Expressions for the length of arcs  $x = f(y)$ ;  $x = f(t)$ ,  $y = \varphi(t)$ ;  $r = f(\theta)$

**Volumes and Surfaces of Revolution:** Introduction - Expression for the volume obtained by revolving about either axis - Expression for the volume obtained by revolving about any line - Area of the surface of the frustum of a cone - Expression for the surface of revolution - Pappus Theorems - Surface of revolution.

Text:

• Shanti Narayan, P.K. Mittal *Differential Calculus*, S.CHAND, NEW DELHI

• Shanti Narayan *Integral Calculus*, S.CHAND, NEW DELHI

Bos university members :-

Members:-

- 1) [Signature]
- 2) [Signature]
- 3) K. Narayan [Signature]
- 4) [Signature]
- 5) [Signature]
- 6) [Signature]
- 7) [Signature]

[Signature]  
Bos chairman

6) [Signature]

SEMESTER-II

2.2 Differential Equations

DSC-1B

BS:201

Theory: 5 credits and Tutorials: 0 credits  
Theory: 5 hours /week and Tutorials: 1 hours /week

Objective: The main aim of this course is to introduce the students to the techniques of solving differential equations and to train to apply their skills in solving some of the problems of engineering and science.

Outcome: After learning the course the students will be equipped with the various tools to solve few types differential equations that arise in several branches of science.

Unit- I

Differential Equations of first order and first degree: Introduction - Equations in which Variables are Separable - Homogeneous Differential Equations - Differential Equations Reducible to Homogeneous Form - Linear Differential Equations - Differential Equations Reducible to Linear Form - Exact differential equations - Integrating Factors - Change in variables - Total Differential Equations - Simultaneous Total Differential Equations - Equations of the form  $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$ .

Unit- II

Differential Equations first order but not of first degree: Equations Solvable for  $p$  - Equations Solvable for  $y$  - Equations Solvable for  $x$  - Equations that do not contain  $x$  (or  $y$ ) - Equations Homogeneous in  $x$  and  $y$  - Equations of the First Degree in  $x$  and  $y$  - Clairaut's equation. Applications of First Order Differential Equations : Growth and Decay - Dynamics of Tumour Growth - Radioactivity and Carbon Dating - Compound Interest - Orthogonal Trajectories

Unit- III

Higher order Linear Differential Equations: Solution of homogeneous linear differential equations with constant coefficients - Solution of non-homogeneous differential equations  $P(D)y = Q(x)$  with constant coefficients by means of polynomial operators when  $Q(x) = bc^{ax}, b \sin ax / b \cos ax, bx^k, Vc^{ax}$  - Method of undetermined coefficients.

Unit- IV

Method of variation of parameters - Linear differential equations with non constant coefficients - The Cauchy - Euler Equation - Legendre's Linear Equations - Miscellaneous Differential Equations. Partial Differential Equations: Formation and solution- Equations easily integrable - Linear equations of first order.

Text:

- Zafar Ahsan, *Differential Equations and Their Applications*

~~Zafar Ahsan~~  
Chairman

University Nominee

Members: 1)

2) KMA

3) K Mueen

4) MSA

5) MZ

6) Moeen

7)


7) KMA

**SR& BGNR Govt. Arts & Science College(A) Khammam-507002**  
**Department of Mathematics**  
**Panel of Examiners**

S.No	NAME OF THE EXAMINER& DESIGNATION	WORKING PLACE	CELL NO	EMAIL ID	PAPERS DEALING
1	A.SATHYANARAYANA ASST. PROFESSOR OF MATHS	ABV GOVT. DEGREE COLLEGE, JANAGAON	8106048284	satyamanumalla@gmail.com	DC,RA,LA,SG
2	D.VENKANNA ASST. PROFESSOR OF MATHS	KAKATIYAGOV'T DEGREE COLLEGE HANUMAKONDA	9492308139	dvenkanna74@gmail.com	DC,RA,LA
3	RAMESH REDDY ASST. PROFESSOR OF MATHS	GDC, ADILABAD	9440822564	rameshkattajl@gmail.com	DC,LA
4	Dr.D. PUSHPA ASST. PROFESSOR OF MATHS	ABV GOVT. DEGREE COLLEGE, JANAGAON	9440553078	push435@gmail.com	DC,RA,SG
5	Dr. MARGAM ARCHANA ASST. PROFESSOR OF MATHS	SRR GOVT. DEGREE COLLEGE KARIM NAGAR	9985387641	Archana.margam@gmail.com	DC,RA
6	B.ELIZABETH RANI LECTURER IN MATHS	GOVT DEGREE COLLEGE(W) KARIM NAGAR	9963711626	srikrutha007@gmail.com	DC,RA,SG
7	BOLLA SAIDI REDDY ASST. PROFESSOR OF MATHS	KRR GOVT. DEGREE COLLEGE, KODADA	9492185921	Saidireddy74@gmail.com	DC,RA,LA,SG
8	R.RUDRANI ASST. PROFESSOR OF MATHS	GDC, RANGASAI PETA	9959464261		
9	E.KOMURIAH ASST. PROFESSOR OF MATHS	SRR GOVT. DEGREE COLLEGE KARIM NAGAR	9491596214	Ek.nitpy@gmail.com	DC,RA,LA,SG
10	D.PAVAN KUMAR ASST. PROFESSOR OF MATHS	SRR GOVT. DEGREE COLLEGE KARIM NAGAR	8897495969	pavandonthula@gmail.com	DC,RA,LA
11	K.NARASIMHA RAO ASST. PROFESSOR OF MATHS	GDC(W),KHAMMAM	9849219191	narsikr2020@gmail.com	P.A.L.A.N.A.V.C.
12	B.MADHAVI ASST. PROFESSOR OF MATHS	PINGLEE DEGREE COLLEGE,WARANGAL	9949677817		


DC = Differential Calculus   RA= Real Analysis   LA= Linear Algebra   SG= Solid Geometry

University Nominee


Members :- 1) 

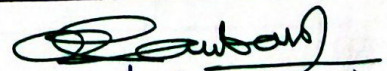
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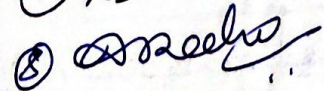
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5)

6) 

  
Chairman

① 

② 



# Board of Studies Meeting

NOTICE

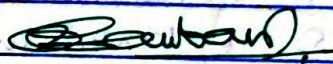
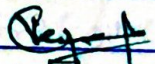
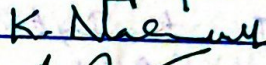
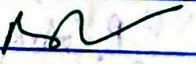
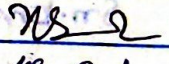
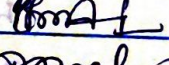
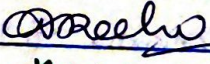

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It is here by informed that the Board of Studies of Mathematics meeting will be held on 25.11.2019 at 1:00 pm in the Department of Mathematics. The meeting will be chaired by Head of the Dept. Mathematics.

## Agenda

1. Approval of Examination Pattern of theory and Internal Examinations.
2. Any other matter.

All the members of Board of Studies of Mathematics are requested to attend the meeting without fail.

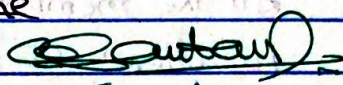
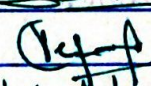


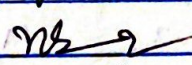

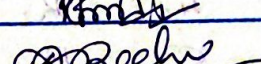
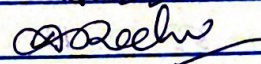
1. Dr. N. Krishna Reddy, University Nominee
2. V. Sambasiva Rao Chairman 
3. M. Venugopal Member 
4. K. Navashina Rao Member 
5. B. Venkateswara Rao Member 
6. K. Srinivas Member 
7. K. Joythirmai Rani Member 
8. P. Anuradha Member 
9. S. Kandyalli Srinam member 

Minutes of the Meeting

The Board of Studies of Mathematics meeting was held on 25.11.2019 at 1.00pm Venue Dept. of Mathematics, Under the Chairmanship of V. Sambasiva Rao, H.O.D of Mathematics. to discuss the following agenda.

1. Approval of B.Sc I year I-Semester and II-Semester Examination Pattern of Theory and Internal Examinations.
2. Any other Matter.

Members Attended:

1. Dr. N. Krishna Reddy, University Noremar
2. V. Sambasiva Rao HOD & Chairman 
3. M. Venugopal Member 
4. K. Narashimha Rao Member 
5. B. Venkateswara Rao Member 
6. K. Srinivas Member 
7. K. Jayashirani Rani Member 
8. P. Anuradha Member 
9. Sri. Kondyalli Sriram member 

The Chairman V. Sambasiva Rao has given opening Remarks of the Board of studies about the "change of Examination Pattern of B.Sc I year I-Semester and II-Semester from the academic year 2019 onwards.

All the members ~~are~~ discussed about the Theory and Internal Examination Pattern and unanimously resolved to remove the Practical Examinations from this academic year 2019-20.

Theory Pattern and Internal for I-Semester & II-Semester

Each Semesters consists 100 Marks for Theory Examination and 25 marks for Internal Paper.

Theory:

Each question Paper having two (2) Parts.

Part - I

8 (Eight) questions are to be set, and ~~two (2)~~ choosing two (2) from each unit, and 6 (Six) questions to be answered. Each question carries 6 marks. i.e.  $6 \times 6 = 36$  M

Part II

Part II having four (4) Sections i.e. A, B, C and D.

Section A: Unit - I

Section B: Unit - II

Section C: Unit - III

Section D: Unit - IV

Each Section consists two questions. Four (4) questions has to be answered choosing one (1) from each section.

Theory consists - 100 Marks.

i.e.  $4 \times 16 = 64$

Internal Paper consists: 25 Marks

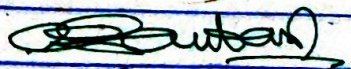
Internal Paper Pattern:

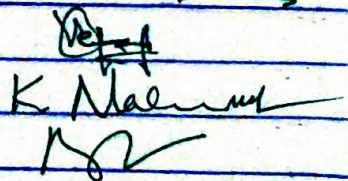
Two Internal Examinations should be conducted for each Semester.

Internal Paper consists 6 (Six) questions, 5 (Five) questions has to be answered. Each question carries 5 marks.

All the above resolutions are taken unanimously by University Nominee and all the members of Board of Studies Members attended:

1. Dr. N. Krishna Reddy, University Nominee
2. V. Sambasiva Rao H.O.D at chairman
3. M. Venugopal Member
4. K. Navashima Rao Member
5. B. Venkateswara Rao Member





6. K. Srinivas

MS

7. K. Joythirmai Rani

KMA

8. P. Anuradha

casacelu

9. Sri Kondapalli Srinam

Dist. Employment office

NOTICE

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It is hereby informed that the board of studies meeting will be held on 27.8.20 at 11:00 AM in the Department of Mathematics. The meeting will be chaired by Head of the dept. & chairman, BOS.

Agenda:—

1. Change of the Examination patterns and reduction of the duration of Exam due to COVID-19 pandemic.
2. Any other relevant matter.

All the members of Board of studies of mathematics are requested to attend the meeting without fail.

S. Satish  
Chairman  
BOS, Mathematics

- 1) Dr. Tirumala Devi, Dept. of Mathematics, K.V. University Nominee:— Tirumala
- 2) D. Venugopal, Asst. Professor  
Kakatiya Govt. College, Hanamakonda — Member:— D. Venugopal
- 3) K. Narasimha Rao, Asst. Professor  
GDC (W), Khammam — Member:— K. Narasimha Rao
- 4) B. Venkateswara Rao, SRBGNRGDC, KMM — Member:— B. Venkateswara Rao
- 5) K. Srinivas, " " " " :— K. Srinivas
- 6) K. Jyothirmayi Rani, " " " " :— K. Jyothirmayi Rani
- 7) P. Anuradha, " " " " :— P. Anuradha
- 8) Sri. Kondapalli Sriram, — Member:— Sri. Kondapalli Sriram  
Dist. Employment Officer
- 9) Smt. U. Naga Retha Rani — SRBGNRGDC, KMM :— Smt. U. Naga Retha Rani

## Minutes of the Meeting.


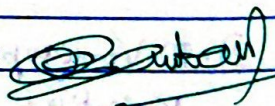

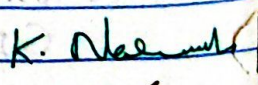
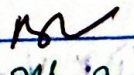
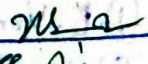
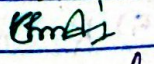
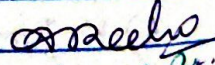
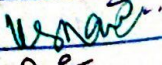
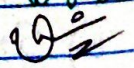
The Board of studies of Mathematics meeting was held on 27.8.20 at 11.00 AM in the Department of Mathematics under the chairmanship of V. Sambasiva Rao H.O.D of Mathematics, to discuss the following agenda.

### Agenda

1. Change of the Examination Pattern of the Question Paper and duration of Examination. (Time) - due to Covid-19 Pandemic Situation.

2. Any other relevant matters.

### Members attended.

1. Dr. Tirumala Devi Dept. of Mathematics, K. U Warangal  
— University Nominee — 
2. V. Sambasiva Rao H.O.D of Mathematics 
3. M. Venugopal member 
4. K. Navasimha Rao Member 
5. B. Venkateswara Rao Member 
6. K. Srinivas member 
7. K. Jaythirmai Rani member 
8. P. Anuradha member 
9. Sri Kodadelli Srinivas Member. 
10. Mr. V. Nagesh Kumar member 

Due to COVID-19 Pandemic Situation Telangana Council of Higher Education has decided to conduct the Examinations for U.G. students in the month Sep. and Oct 2020.

The Higher Education Council instructed all the Universities and Autonomous colleges to conduct the Examinations with reduced duration of exam from 3 hours to 2 hours. and also instructed to change the Examination Pattern accordingly.

According to the instruction of Telangana Council of Higher Education the Board of Studies of Mathematics discussed and unanimously resolved the following model of the question paper for the examinations which are being held in Pandemic Situation.

### Theory Paper Model: I, II, IV, V, VI Semesters

#### Section: A:

Eight questions will be given two from each unit. Out of these the student has to answer only Four (4) Questions ( $4 \times 10 = 40$  M)

For I, II semesters  $4 \times 12 = 48$  M

#### Section B

Four questions will be given one from each Section. Unit out of these the students has to answer only Two (2) Questions: ( $2 \times 20 = 40$  M)

For I, II semesters ( $2 \times 26 = 52$  M)

Total Marks of the Paper = 80 M.

Duration of the time 2 hours

Total Marks of the paper for I, II sem. = 100 M

Duration of the time = 2 hrs

(P.T.O.)

## Practical Model Paper for Semesters IV, VI

Practical question Paper contains eight questions (8).  
~~Four~~ Four (4) questions from odd semester and Four (4) questions from even semester.

The students should answer only 4 (four) questions, choosing two (2) from each semester.

Each question carries 15 marks.

Answer scripts -	$4 \times 15 = 60$ m
viva	20 m
Record	20 m
Total	<u>100 m</u>

1. ~~Allyus~~

2. ~~Allyus~~

3. ~~Allyus~~

4. ~~Allyus~~

5. ~~Allyus~~

6. ~~Allyus~~

7. ~~Allyus~~

8. ~~Allyus~~

9. ~~Allyus~~

10. ~~Allyus~~



# BOARD OF STUDIES MEETING 2020-21

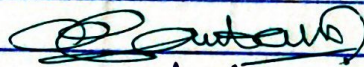
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All the members of Board of studies are hereby informed that the Board of studies meeting will be held on 27.02.2020 at 11.00am in the Department of mathematics. The meeting will be chaired by the Head of the department & chairman, BOS.

## Agenda:-

1. Approval of Semester III and Semester IV syllabus
2. Approval of Skill Enhancement Course (SEC) syllabus for III & IV semesters.
3. Any other matter.


All the members of Board of Studies are requested to attend without fail.

  
Chairman  
BOS, Mathematics

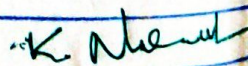
1. Dr. Tirumala Devi, Asst. Professor, Dept. of mathematics  
Kakatiya University, Warangal  
— University Nominee —



2. M. Venugopal, Asst. Professor, Kakatiya Govt. College,  
Hanamkonda — Member —



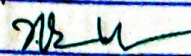
3. K. Nageswara Rao, Asst. Professor, GDC(W), Ichamman  
— Member —



4. B. Venkateswara Rao — Member



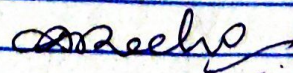
5. K. Srinivas — member



6. K. Jyothirmayi Devi — member

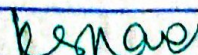


7. P. Anuradha — member



8. Dr. K. Saroj — member

9. Sai Kondapalli Sairam — Member



Dist. Employment Officer  
10. U. Naga Rekha Rani — member





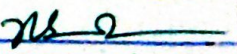
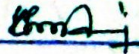


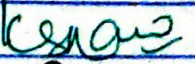



The Board of Studies of Mathematics meeting was held on 27.8.2020 at 12.00 PM in the Department of Mathematics under the chairmen of V. Sambasiva Rao H.O.D of Mathematics to discuss the following agenda.

### Agenda:

1. Approval of Semester III and Semester IV Syllabus
2. Approval of Skill Enhancement Course (SEC) syllabus for III and IV Semesters.
3. Any other matter.

### Members Attended

1. Dr. Tirumala Devi  
Asst. Prof. of Mathematics  
University nominee - 
2. M. Venugopal  
Asst. Prof., Kakatiya Govt. College  
Thanamkonda - Member - 
3. K. Navasrama Rao  
Asst. Prof. G.P.C(W) Channarayana  
Member - 
4. B. Venkateswara Rao - Member 
5. K. Srinivas - Member 
6. K. Sogkirmairani - member 
7. P. Anusudha - Member 
8. Dr. K. Saroja - Member 
9. Sri Kondapalli Srivani - Member 
10. U. Nagasekharaui - member 

The chairman V. Sambasiva Rao has given opening remarks to B.O.S about the Syllabus of III Semester and IV Semester 2020-2021 onwards.

All the members are discussed about the syllabus and approved the syllabus. The following syllabus is unanimously approved the syllabus.

Semester: <u>III</u>	Real Analysis	DSc 1C
<u>IV</u>	Algebra	DSc 1D

### Skill Enhancement Course

For Semester III

SEC I : Theory of Equations

SEC II : Logic and Sets

For Semester IV :

SEC III : Number Theory

SEC IV : Vector Calculus.

- ① ~~ADJUS~~
- ② ~~GA~~
- ③ ~~Rabun~~
- ④ Bondi
- ⑤ MV
- ⑥ ~~ooeehw~~
- ⑦ ~~Q<sup>o</sup>~~
- ⑧ K Naeem
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SR&BGNR ARTS AND SCIENCE COLLEGE(AUTONOMOUS)  
KHAMMAM-TELANGANA

(An autonomous institution under the jurisdiction of Kakatiya University)

DSC 1C :REAL ANALYSIS

Theory: 5 Credits and Tutorials 0 Credits

Theory: 5 hours/week and Tutorials 1 hr/week

UNIT-I

Sequences : limits of Sequences- A Discussions about Proofs- Limit Theorems for Sequences- Monotone Sequences and Cauchy Sequences- subsequences – Limit sup's and Limit inf's – series – Alternating series and Integral Tests.

UNIT-II

Continuity : Continuous functions – Properties of Continuous Functions –Uniform Continuity – Limits of Functions.

UNIT-III

Differentiation : Basic Properties of the Derivative –The Mean Value Theorem – L' Hospital Rule – Taylor's Theorem.

UNIT-IV

Integration : The Riemann Integral – Properties of Riemann Integral – Fundamental Theorem of Calculus.

Text:

- Kenneth A Ross, *Elementary Analysis-The Theory of Calculus*

References:

- S.C. Malik and Savita Arora, *Mathematical Analysis, Second Edition, Wiley Eastern Limited, New Age International (P) Limited, New Delhi, 1994.*
- William F. Trench, *Introduction to Real Analysis*
- Lee Larson, *Introduction to Real Analysis I*
- Shanti Narayan and Mittal, *Mathematical Analysis*
- Brian S. Thomson, Judith B. Bruckner, Andrew M. Bruckner; *Elementary Real analysis*
- Sudhir R., Ghorpade, Balmohan V., Limaye; *A Course in Calculus and Real Analysis*

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4) BMA

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10) NR

**SR&BGNR ARTS AND SCIENCE COLLEGE(AUTONOMOUS)  
KHAMMAM-TELANGANA**

(An autonomous institution under the jurisdiction of Kakatiya University)  
B.Sc. MATHEMATICS II Yr SEMESTER - IV(w.e.f. 2019-2020 batch onwards)

**DSC 1D :ALGEBRA**

Theory: 5 Credits and Tutorials 0 Credits

Theory: 5 hours/week and Tutorials 1 hr/week

**Unit- I**

**Groups:** Definition and Examples of Groups- Elementary Properties of Groups- Finite Groups - Subgroups -Terminology and Notation -Subgroup Tests - Examples of Subgroups.

**Cyclic Groups:** Properties of Cyclic Groups - Classification of Subgroups Cyclic Groups.

**Unit- II**

**Permutation Groups:** Definition and Notation -Cycle Notation-Properties of Permutations - Isomorphisms ; Motivation- Definition and Examples -Cayley's Theorem Properties of Isomorphisms -Automorphisms-Cosets and Lagrange's Theorem Properties of Cosets - Lagrange's Theorem and Consequences-An Application of Cosets to Permutation Groups. '

**Unit- III**

**Normal Subgroups and Factor Groups:** Normal Subgroups-Factor Groups - Applications of Factor Groups -Group Homomorphisms - Definition and Examples -Properties of Homomorphisms -The First Isomorphism Theorem.

**Introduction to Rings:** Motivation and Definition -Examples of Rings -Properties of Rings - Subrings.

**Integral Domains:** Definition and Examples - Fields -Characteristics of a Ring.

**Unit- IV**

**Ideals and Factor Rings:** Ideals -Factor Rings -Prime Ideals and Maximal Ideals.

**Ring Homomorphisms:** Definition and Examples-Properties of Ring- Homomorphisms.

**Text:**

- Joseph A Gallian, *Contemporary Abstract algebra (9th edition)*

**References:**

- Bhattacharya, P.B Jain, S.K.; and Nagpaul, S.R.,*Basic Abstract Algebra*
- Fraleigh, J.B, *A First Course in Abstract Algebra.*
- Herstein, I.N, *Topics in Algebra*

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- 2) ~~Vegaf~~ ✓
- 3) ~~Barbary~~ ✓
- 4) ~~BMA~~ ✓
- 5) ~~✓~~
- 6) ~~✓~~
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- 8) K. Meenul
- 9) ✓
- 10) ✓