S R R & C V R GOVT. DEGREE COLLEGE

(Autonomous)

VIJAYAWADA – 520004, KRISHNA DISTRICT.

Minutes of the Meeting Board of Studies

Department of Mathematics

Dated : 16-03-2018.

SRR & CVR GOVT. DEGREE COLLEGE
(Autonomous)
NAAC accredited with 'B' Grade
Machavaram, Vijayawada – 520 004, Krishna District.
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Dr. Velaga Joshi, Principal
M.A.(Phil.), M.A.(Hist), M.A.(M.C.J.), B.L., M.Phil., Ph.D

MINUTES OF THE MEETING OF DEPARTMENT OF MATHEMATICS(BOS)

A meeting of Board of studies of Department of Mathematics held on 16-03-2018 in the Department of Mathematics for 3rd and 4th semester of II B.Sc and II B.A/B.Com/B.Sc 4th semester Analytical Skills(Foundation course), syllabus under the chairmanship of K.V.Naga Lakshmi , Head Of the Mathematics Department . The following members are present

1. **University Nominee** :
   Prof. Bhavanari Satyanarayana,
   Head of the Department of Mathematics,
   Acharya Nagarjuna University,
   Nagarjuna Nagar ,Guntur
   Bh. Satyanarayana 16/3/2018

2. **Subject Expert** :
   Dr. S.Eswaraiah Setty,
   Reader & HOD of Mathematics,
   Principal, S.G.S College, Jaggaiah pet,
   Krishna Dist.

3. **Subject Expert** :
   Sri. G.V.Bhaskar ,
   HOD of Mathematics,GDC for Women,
   Guntur.
   G.V. Bhaskar

4. **Chairman**
   Smt.K.V.Naga Lakshmi , :
   Lecturer in Mathematics,
   SRR & CVR Govt.Degree college,
   Autonomous ,Vijayawada
   16/3/2018

5. **Alumni** :
   Smt.D.Swarna Kumari
   SRR &CVR Govt. Degree College
   Vijayawada
   DSK 16/3/18

16/3/2018 Bh. Satyanarayana 16/3/2018 G.V. Bhaskar DSK 16/3/18

Agenda :-

- To approve Mathematics Syllabus for 3rd and 4th semesters of II B.Sc for the academic year 2018-2019.
- To divide the Syllabus into 5 units.
- To approve Model papers, Blue Print.
- To divide 100 marks into two components.
- a) i)External 60Marks, ii)Internal 40Marks.

  b) External 60marks further divided into two sections. Section-A consisting 20Marks, Section-B consisting -40Marks is approved.
- To evaluate Internal Assessment as follows :-

(a) Internal exams (two)	- 10
(b) Assignments (two)	- 10
(c) Project	- 10
(d) Attendance	- 05
(e) Seminar	- 05
Total	= 40

- To approve the model paper for II B.A/B.Com/B.Sc foundation course (Max.Marks 50).
- To divide the syllabus into FIVE units.
- The Question paper is divided into Section –A & Section -B. Each Section consisting of Maximum 25 Marks.
- Section- A consisting of Objective questions, each question carries 1Mark, 5questions from each unit will be given.
- Section -B consisting of 8 questions, out of which 5 questions to be answered and each carries 5 Marks.
- The pass mark is 20.
- To approve paper setters.
- To approve other Academic activities of the Department.
- To give permission to the Chairman for any small changes.

16/3/2018

Resolutions:-

In BOS meeting the committee has unanimously resolved and approved the following items:-

- The syllabus for Mathematics of 3rd and 4th semester for second BSc Mathematics and 4th semester Analytical Skills (Foundation course) for 2018-2019 is approved.
- To divide 100 marks into two components.
  a) i)External 60Marks,
  ii) Internal 40Marks.

  b) External 60marks further divided into two sections. Section-A consisting 20Marks, Section-B consisting -40Marks is approved.

- Internal exams (two) - 10
  Assignments (two) - 10
  Project - 10
  Attendance - 05
  Seminar - 05
  Total = 40 is approved.

- In the Model paper Section – A consisting Questions of Weightage 4Marks each. Five questions to be answered i.e. 5x4 = 20 marks and Section – B Consisting of Questions of Weightage 8 marks each, Five Questions to be answered 5x8=40Marks is approved.
- To pass the Exam student must get 40% of 60 and overall 40% Combining both internal and external.
- Work load for this paper is 6 hours.
- The Question paper for analytical skills is divided into Section –A & Section -B.
- Each Section consisting of Maximum 25 Marks.
- Section- A consisting of Objective questions, each question carries 1Mark, five questions from each unit will be given.
- Section -B consisting of 8 questions, out of which 5 questions to be answered and each carries 5 Marks.
- The pass mark is 20
- The chairman is given empowerment to do any small changes.
- The Panel of Paper Setters is approved.
- The Controller of examinations is given empowerment for any Changes in selecting paper setter in case of non-availability of examiners as are listed

16/3/2018 16/3/2018 16/3/18

1.Prof. Bhavanari Satyanarayana : 16/3/2018

2. Dr. S.Eswaraiah Setty :

3. Sri. G.V.Bhaskar :

4. Smt.D.Swarna Kumari : 16/3/18

5. Smt. K.V.Naga Lakshmi : 16/3/2018

6. M.L.Das : 16.3.18

7. K.V. Rama Rao : 16/3/2018

8.S.Renuka :

S.R.R & C.V.R GOVT DEGREE COLLEGE
(AUTONOMOUS) NAAC B+
Department of Mathematics
B.Sc. SECOND YEAR MATHEMATICS SYLLABUS
SEMESTER – III, PAPER – 3
ABSTRACT ALGEBRA 60Hrs

UNIT – 1: (10Hrs) GROUPS:-
Binary Operation – Algebraic Structure – Semi group – Monoid – Group definition and elementary properties Finite and infinite groups – examples – order of a group. Composition tables with examples.

UNIT-2: (14Hrs) SUBGROUPS:-
Complex Definition–Multiplication of two complexes Inverse of a complex–Subgroup definition –examples-criterion for a complex to be a subgroups.
Criterion for the product of two subgroups to be a subgroup-union and Intersection of subgroups.
Co-sets and Lagrange's Theorem:-
Cosets Definition – Properties of Cosets – Index of a subgroups of a finite groups – Lagrange's Theorem.

UNIT-3: (12 Hrs) NORMAL SUBGROUPS:-
Definition of normal subgroups-proper and improper normal subgroup-Hamilton group- criterion for a subgroup to be a normal subgroup-intersection of two normal subgroups-Sub group of index 2 is a normal sub group – simple group – quotient group – criteria for the existence of a quotient group.

UNIT-4: (10 Hrs) HOMOMORPHISM:-
Definition of homomorphism – Image of homomorphism elementary properties of homomorphism – Isomorphism – automorphism definitions and elementary properties – kernel of a homomorphism – fundamental theorem on Homomorphism and applications.

UNIT-5: (14 Hrs) PERMUTATIONS AND CYCLC GROUPS:-
Definitions of permutation – permutation multiplication – Inverse of a permutation – cyclic permutations – transposition – even and odd permutations – Cayley's theorem.
Cyclic Groups:-
Definition of cyclic group – elementary properties – classification of cyclic groups.

Reference Books:
1. Abstract Algebra by J.B. Fraleigh, Published by Narosa Publishing house.
2. A text book of Mathematics for B.A. / B.Sc. by B.V.S.S. SARMA and others, Published by S. Chand & Company, New Delhi.
3. **Modern Algebra by M.L. Khanna.**

Suggested Activities:
Seminar/Quiz/Assignments/Project on Group theory and its applications in Graphics and Medical image Analysis.

16/3/2018. 16/3/2018 G.V.B Laxkar DHO 16/3/18

S.R.R & C.V.R GOVT DEGREE COLLEGE
(AUTONOMOUS) NAAC B+

Department of Mathematics

SEMESTER –III, PAPER - 3

ABSTRACT ALGEBRA

BLUE PRINT

DURATION: 3HRS

Total Marks: 60

SECTION – A

Answer any **Five** questions. Each question carries **4 MARKS.** **5x4=20M**

Question	Topics	No. of questions	Weight age
1	UNIT – I	1	4
2	UNIT - I	1	4
3	UNIT – II	1	4
4	UNIT – II	1	4
5	UNIT – III	1	4
6	UNIT – III	1	4
7	UNIT – IV	1	4
8	UNIT – IV	1	4
9	UNIT – V	1	4
10	UNIT – V	1	4

SECTION – B

Answer **ALL** Questions. Each question carries **8 MARKS.** **5x8=40M**

Question	Topic	No. of questions	Marks
11. (a) or (b)	UNIT- I	2	8
12. (a) or (b)	UNIT – II	2	8
13. (a) or (b)	UNIT – III	2	8
14. (a) or (b)	UNIT – IV	2	8
15. (a) or (b)	UNIT – V	2	8

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S.R.R & C.V.R Govt.Degree College
(Autonomous) NAAC B+
Department of Mathematics
Semester –III, Paper -3
Abstract Algebra

Time: 3 Hours **Model Question Paper** **Max.Marks:60**

Section-A

Answer any FIVE Questions **(5x4=20Marks)**

1. In a group, inverse of any element is unique
   సమూహము నందు ఏదైనా మూలకపు విలోమము ఏకైకము.
2. Prove that the set of integers Z is an abelian group for the operation * defined by $a*b=a+b+1 \forall a,b \in z$
   Z అనే పూర్ణ సంఖ్యల సమితిలో * అనే పరిక్రియ $a*b=a+b+1 \forall a,b \in z$ గా నిర్వచించినట్టైయితే Z ఎబేరియన్ సమూహము అవుతుందని చూపుము.
3. Show that intersection of two subgroups is also a subgroup
   రెండు ఉపసమూహాముల చేదనము మరల ఉపసమూహము అవుతుందని చూపుము.
4. If H is any subgroup of a group G, then prove that $H^{-1}=H$
   H అనేది G సమూహామునకు ఒక సమూహము అయితే $H^{-1}=H$ అవుతుందని చూపుము.
5. Show that every subgroup of an abelian group is normal.
   ఎబీలియన్ సమూహము యొక్క ప్రతి ఉపసమూహము అభిలంబ ఉపసమూహము అవుతుందని చూపుము.
6. Show that Intersection of any two normal Subgroups of a group is a normal subgroup
   ఏదైనా రెండు అభిలంబ ఉపసమూహముల ఛేదనము మరల అభిలంబ ఉపసమూహము అవుతుందని చూపుము.
7. Prove that the homomorphic image of a group is a group
   సమూహము యొక్క సమరూపత ప్రతిబింబము కూడా సమూహము అవుతుందని చూపుము.
8. If f is a homomorphism from a group G in to a group G^1 then kerf is normal subgroup of G
   f అనునది సమూహము G నుండి G^1కు సమరూపము అయిన Gకి kerf అభిలంబ ఉపసమూహము అవుతుందని చూపించుము.
9. Express the permutation $\begin{pmatrix}1&2&3&4&5&6\\6&5&4&3&1&2\end{pmatrix}$ as the product of disjoint cycles.
   $\begin{pmatrix}1&2&3&4&5&6\\6&5&4&3&1&2\end{pmatrix}$ అనే ప్రస్తారమును విముక్త చక్రాల లబ్ధంగా వ్రాయుము.
10. G is a cyclic group of order r and 'a' is a generator of G. Show that a^m is a generator of G if and only if (m,n)=1
    G, n వ తరగతి గల ఒక చక్రీయ సమూహము మరియు 'a', Gనకు ఒక జనకమూలకం అయితే a^m అనేది Gనకు జనకమూలకం కావడానికి అవశ్యక పర్యాప్త నియమము (m,n)=1 అని చూపుము.

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Section-B

Answer ALL Questions each question carries 8 marks **(5x8=40Marks)**

11. (a) If G is a group and a,b∈G then prove that the equations ax=b and ya=b have unique solutions in G
G అనేది ఒక సమూహము మరియు a,b∈ G అయితే ax=b మరియు ya=b అనే సమీకరణములకు G లో ఏకైక సాధనలు ఉంటాయని చూపుము.

(or)

(b) Prove that the set G or real numbers other than -1 with operation * such that a*b=a+b+ab ∀ a, b ∈ G is an abelian group.
G =R-{1} అనే సమితిలో * అనే పరిక్రియ a*b=a+b+ab ∀ a, b ∈ G నిర్వచించినట్టైయితే G ఎబీలియన్ సమూహము అవుతుందని చూపుము.

12. (a) State and prove langrange's theorem for finite groups
పరిమిత సమూహాలపై లెగ్రాంజ్ సిద్ధాంతమును ప్రవచించి నిరూపించుము.

(or)

(b) Let H be a subgroup of a group G and a,b∈ G then prove that (i) $Ha=Hb \Leftrightarrow ab^{-1} \in H$
(ii) $aH=bH \Leftrightarrow a^{-1}b \in H$
H అనేది E1 సమూహమునకు ఒక ఉపసమూహము మరియు a,b∈G అయితే
(i) $Ha=Hb \Leftrightarrow ab^{-1} \in H$ (ii $aH=bH \Leftrightarrow a^{-1}b \in H$ అని చూపుము.

13. (a) If H is a subgroup of G and N is normal subgroup of G, then show that (a) H∩N is a normal subgroup of H and (b) N is a normal subgroup of HN.
G అనే సమూహమునకు H ఒక ఉపసమూహము మరియు N ఒక అభిలంబ ఉపసమూహము అయితే ఈ క్రింది వానిని నిరూపించుము.

(or)

(b) Prove that a subgroup H of a group G is a normal subgroup of G if and only if each left coset of H in G is a right coset of H in G.
E1 సమూహమునకు H అనే ఉపసమూహము అభిలంబ ఉపసమూహము కావడానికి ఆవశ్యక పర్యాప్త నియమము G లో H యొక్క ప్రతి ఎడమ సహసమితి G లో H యొక్క కుడి సహసమితి అవుతుందని చూపుము

14. (a) Show that the necessary and sufficient condition for a homomorphism f of a group E1 onto a group 'G' with kernel K to be an isomorphic of G into G^1 is that K=Kerf={e}
$f:G \rightarrow G^1$ అనే ఒక సంగ్రస్త సమరూపత తుల్యరూపత కావడానికి ఆవశ్యక పర్యాప్త నియమము K=Kerf={e} అని చూపుము.

(or)

(b) Prove that every homomorphic image of a group G is isomorphic to some quotient group of G.
G సమూహము యొక్క సమరూపత ప్రతిబింబము దాని యొక్క వ్యుత్పన్న సమూహములో తుల్యరూపతను కల్గియుంటుందని చూపుము.

15. (a) Let S_n be a symmetric group of n symbols and left A_n be the group of even permutations then show that A_n is a normal is S_n and $O(A_n)=\frac{1}{2}n!$
S_n అనేది n సంకేతాలు గల సౌష్టవ సమూహము. A_n అనేది సరిప్రస్తారాల సమూహము. అయితే A_n అనేది S_n కి అభిలంబ ఉపసమూహము అవుతుందని మరియు $O(A_n)=\frac{1}{2}n!$ అని చూపుము.

(or)

(b) Prove that every subgroup of a cyclic group is cyclic
చక్రియ సమూహము యొక్క ప్రతి ఉపసమూహము చక్రియ సమూహము అవుతుందని చూపుము.

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S.R.R & C.V.R GOVT DEGREE COLLEGE
(AUTONOMOUS) NAAC B$^+$
Department of Mathematics
B.Sc. SECOND YEAR MATHEMATICS SYLLABUS
SEMESTER – IV, PAPER – 4
REAL ANALYSIS **60Hrs**

UNIT – 1: (12Hrs) REAL NUMBERS:-

The algebraic and order properties of R, Absolute value and Real line, Completeness property of R, Application of supreme property; intervals. No. Question is to be set from this portion.

Real Sequences: Sequences and their limits, Range and Boundedness of Sequences, Limit of a sequence and Convergent Sequence.

The Cauchy's criterion, properly divergent sequences, Monotone sequences, Necessary and Sufficient condition for Convergence of Monotone Sequence, Limit Point of Sequence, Subsequences and the Bolzano-weierstrass theorem-Cauchy Sequence –Cauchey's general principal of convergence theorem.

UNIT –II: (12Hrs) INFINTE SERIES:-

Series: Introduction to series, convergence of series. Cauchey's general principle of convergence for series tests for convergence of series, Series of Non-Negative Terms.

1. P-test
2. Cauchey's n^{th} root test or Root Test.
3. D- Alemberts' Test or Ration Test.
4. Alternating Series – Leibnitz Test.

Absolute convergence and conditional convergence, semi convergence.

UNIT –III: (12Hrs) CONTINUITY:-

Limits: Real valued Functions, Boundedness of a function. Limits of functions. Some extensions of the limit concept. Infinite Limits. Limit at infinity. No. Question is to be set from this portion.

Continuous functions: Continuous functions, Combinations of continuous functions, Continuous Functions on intervals, uniform continuity.

UNIT –IV: (12Hrs) DIFFERENTIATION AND MEAN VALUE THEOREMS:-

The derivability of a function, on an interval, at a point, Derivability and continuity of a function, Graphical meaning of the Derivation, Mean value Theorems; Role's Theorem, Lagrange's Theorem, Caouchhy's Mean value Theorem.

UNIT –V: (12Hrs) REMANN INTEGRATION:-

Riemann Integral, Riemann integral functions, Darboux theorem. Necessary and sufficient condition for R – integrability, Properties of integrable functions, Fundamental theorem of integral calculus, integral as the limit of a sum, Mean value Theorems.

Reference Books:

1. Real Analysis by Rabert & Bartely and D.R. Sherbart, published by John Wiley.
2. A Text Book of B.Sc Mathematics by B.V.S.S. Sarma and others. Published by S. Chand & Company Pvt. Ltd., New Delhi.
3. Elements of Real Analysis as per UGC Syllabus by Shanthi Narayan and Dr. M.D. Raisingkania Published by S. Chand & Company Pvt. Ltd., New Delhi.

Suggested Activities:

Seminar//Quiz/Assignments/Project on Real Analysis and its applications

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(AUTONOMOUS) NAAC B+

Department of Mathematics

SEMESTER –IV, PAPER - 4

REAL ANALYSIS

BLUE PRINT

DURATION: 3HRS **Total Marks: 60**

SECTION – A

Answer any **Five** questions. Each question carries **4 MARKS.** **5x4=20M**

Question	Topics	No. of questions	Weightage
1	UNIT – I	1	4
2	UNIT - I	1	4
3	UNIT – II	1	4
4	UNIT – II	1	4
5	UNIT – III	1	4
6	UNIT – III	1	4
7	UNIT – IV	1	4
8	UNIT – IV	1	4
9	UNIT – V	1	4
10	UNIT – V	1	4

SECTION – B

Answer **ALL** Questions. Each question carries **8 MARKS.** **5x8=40M**

Question	Topic	No. of questions	Marks
11. (a) or (b)	UNIT- I	2	8
12. (a) or (b)	UNIT – II	2	8
13. (a) or (b)	UNIT – III	2	8
14. (a) or (b)	UNIT – IV	2	8
15. (a) or (b)	UNIT – V	2	8

DRC 16/3/18

SRR & CVR GOVT DEGREE COLLEGE
DEPARTMENT OF MATHEMATICS
SEMESTER-IV, REAL ANALYSIS
MODEL QUESTION PAPER

Time: 3Hrs **Max.Marks: 60**

SECTION-A

Answer any FIVE questions **(5x4=20Marks)**

1. Show that every Cauchy sequence is convergent.
   ప్రతి కోషి అనుక్రమం అభిసరించే అనుక్రమం అని చూపండి.
2. Prove that the sequence $\{S_n\}$ where $S_n=\frac{1}{n+1}+\frac{1}{n+2}+\ldots\ldots+\frac{1}{n+n}$ is convergent.
   $S_n=\frac{1}{n+1}+\frac{1}{n+2}+\ldots\ldots+\frac{1}{n+n}$ గా గల $\{S_n\}$ అనుక్రమం అభిసరిస్తుందని చూపండి.
3. Test for the convergence of $\sum \frac{1}{2^n+3^n}$
   $\sum \frac{1}{2^n+3^n}$ అభిసరరణీయతను పరీక్షించండి.
4. Show that the series $\sum(-1)^n\left(\sqrt{n^2+1}-n\right)$ is conditionally convergent
   శ్రేణి $\sum(-1)^n\left(\sqrt{n^2+1}-n\right)$ నియతాభిసరణం చెందుతుందని చూపుము.
5. If f:[a,b]→R is continuous on [a,b] then prove that f is bounded on [a,b]
   f:[a,b]→R ప్రమేయం [a,b] లో అవిచ్ఛిన్నమైతే [a,b] లో f పరిబద్ధం అని చూపండి.
6. Discuss the continuity of f defined by $f(x)=\frac{e^{\frac{1}{x}}-1}{e^{\frac{1}{x}}+1}$, $x\neq 0$ and $f(0)=1$ at $x=0$
   $f(x)=\frac{e^{\frac{1}{x}}-1}{e^{\frac{1}{x}}+1}$, $x\neq 0$ & $f(0)=1$ అయ్యేటట్టు నిర్వచింపబడిన f యొక్క అవిచ్ఛిన్నతను $x=0$ వద్ద చర్చించండి.
7. Verify Cauchy's Mean Value Theorem for $f(x)=x^2$, $g(x)=x^3$ in [1,2]
   $f(x)=x^2$, $g(x)=x^3$ లకు [1,2] లో కోషి మాధ్యము మూల్య సిద్ధాంతాన్ని సరిచూడండి.
8. Discuss the applicability of Lagrange's mean value theorem for
   $f(x)=x(x-1)(x-2)$ on $[0,\frac{1}{2}]$
   $[0,\frac{1}{2}]$ అంతరంలో $f(x)=x(x-1)(x-2)$ ప్రమేయానికి లెగ్రాంజ్ సిద్ధాంత ప్రయోగాన్ని విచారించుము.
9. Prove that the function defined on [0,1] by f(x)=1 when x is rational, f(x)=-1 when x is irrational, is not integrable.
   f(x)=1, x అకరణీయమైతే, f(x)=-1 x కరణీయమైతేగా నిర్వచించబడిన ప్రమేయం సమాకలనీయం కాదని చూపుము.
10. Evaluate $\int_0^{\frac{\pi}{4}}(sec^4x-Tan^4x)dx$
    $\int_0^{\frac{\pi}{4}}(sec^4x-Tan^4x)dx$ ను సాధించండి.

16/3/2018 16/3/18

SECTION – B

Answer ALL questions **(5x8=40Marks)**

11. (a) State and Prove Cauchy's first theorem on Limits
అవధుల మీద కోషి మొదటి సిద్ధాంతమును ప్రవచించి నిరూపించండి.

(OR)

(b) Show that the sequence $\{S_n\}$ defined by $S_n=1+\frac{1}{1!}+\frac{1}{2!}+\cdots\ldots+\frac{1}{n!}$ is convergent.
$S_n=1+\frac{1}{1!}+\frac{1}{2!}+\cdots\ldots+\frac{1}{n!}$ గా గల $\{S_n\}$ అనుక్రమం అభిసరిస్తుందని చూపండి.

12. (a) State and prove Ratio Test
నిష్పత్తి పరీక్షను ప్రవచించి, నిరూపించండి.

(OR)

(b) State and prove Leibnitz Test
లైబ్నిజ్ పరీక్షను ప్రవచించి నిరూపించండి.

13. (a) Examine the continuity of the function f defined by $f(x)=|x-1|+|x-2|$ at $x=1$ and 2
ప్రమేయం $f(x)=|x-1|+|x-2|$ గా నిర్వచించబడితే $x=1,2$ వద్ద దాని అవిచ్ఛిన్నతను పరీక్షించండి.

(OR)

(b) If a function f is continuous on [a,b] then f is uniformly continuous on [a,b]
f అనే ప్రమేయం [a,b] పై అవిచ్ఛిన్నమైతే, అది [a,b] పై ఏకరూప అవిచ్ఛిన్నమౌతుంది.

14. (a) State and prove Rolle's mean value theorem.
రోలె మధ్య మూల సిద్ధాంతాన్ని ప్రవచించి నిరూపించండి.

(OR)

(b) Show that $f(x)=|x|+|x-1|$ is not derivable at $x=0$ and $x=1$.
$x=0$, $x=1$ల వద్ద $f(x)=|x|+|x-1|$ అవకలనీయం కాదు అని చూపండి.

15. (a) A bounded function $f:[a,b]\to R$ is Reimann integrable on [a,b] if an only if for each $\in>0$ there exists a partition P of [a,b] such that $U(p,f)-L(p,f)<\in$.
$f:[a,b]\to R$ పరిబద్ధ ప్రమేయం [a,b] మీద రీమాన్ సమకలనం కావాడానికి ఆవశ్యక పర్యాప్త నియమం ప్రతి $\in>0$ అనుగుణంగా $U(p,f)-L(p,f)<\in$ అయ్యేటట్టు P వ్యవస్థితం అని చూపండి.

(OR)

(b) State and prove fundamental theorem of Integral Calculus.
సమాకలన మూల సిద్ధాంతాన్ని నిర్వచించి నిరూపించండి.

16/3/2018 16/3/2018

S.R.R & C.V.R GOVT DEGREE COLLEGE
(AUTONOMOUS) NAAC B+
Department of Mathematics
Foundation Course

ANALYTICAL SKILLS

Syllabus, For all Degree Programmes.

Semester – IV (Total 30 Hrs)

UNIT – 1

Data Analysis:-The data given in a Table, Graph, Bar Diagram, Pie Chart, Venn diagram or a passage is to be analyzed and the questions pertaining to the data are to be answered.

UNIT – 2

Sequence and Series:- Analogies of numbers and alphabets completion of blank spaces following the pattern in A:b::C: d relationship odd thing out; Missing number in a sequence or a series.

UNIT - 3

Arithmetic ability:-Algebraic operations BODMAS, Fractions, Divisibility rules, LCM&GCD (HCF).

Date, Time and Arrangement Problems: Calendar Problems, Clock Problems, Blood Relationship.

UNIT - 4

Quantitative aptitude:- Averages, Ration and proportion, Problems on ages, Time-distance – speed.

UNIT – 5

Business computations:- Percentages, Profit &loss, Partnership, simple compound interest.

Reference Books:

1. Quantitative Aptitude for Competitive Examination by R S Agrawal, S.Chand publications.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogitaprakasan, Kic X, Kiran Prakasan publishers
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.
5. Old question Paper of the exams conducted by (Wipro, TCS, Infosys, Etc) at their recruitment process, source-Internet.

16/3/2018 16/3/2018 DKC 16/3/18

S.R.R & C.V.R GOVT DEGREE COLLEGE
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Department of Mathematics
Foundation Course
ANALYTICAL SKILLS
II B.A./B.Com/B.Sc./B.B.A DEGREE EXAMINATION

Semester – IV

BLUE PRINT

DURATION: 2HRS **Total Marks: 50**

SECTION – A

Answer **ALL** questions. Each question carries **1 MARK.** **25x1=25M**

Question	Topics	No of Question	Weight age
1	UNIT – I	5	5
2 – 6	UNIT – II	5	5
7 – 11	UNIT – III	5	5
12 – 16	UNIT – IV	5	5
17 – 21	UNIT – V	5	5

SECTION – B

Answer **Any FIVE** Questions. Each question carries **5 MARKS.** **5x5=25M**

Question	Topic	No of Question	Marks
22 - 23	UNIT- I	2	5
24	UNIT – II	1	5
25 - 26	UNIT – III	2	5
27	UNIT – IV	1	5
28 - 29	UNIT – V	2	5

14/3/2018 14/3/2018 DHO 16/3/18

S.R.R & C.V.R Govt.Degree College

(Autonomous) NAAC B+ College

SEMESTER – IV

II B.Sc./B.A./B.Com. Foundation Course – Model Paper

Time: Two Hours

Maximum: 50 Marks

SECTION A (25x1=25M)

Answer ALL questions. Each carries 1 mark.

UNIT I

1. Study the following table carefully and answer the given questions below it.
క్రింది పట్టికను జాగ్రత్తగా అధ్యయనం చేసి ప్రశ్నలకు సమాధానాలను వ్రాయండి :

Party Year	1970	1975	1980	1985	1990	1995
X	20	60	50	40	35	26
Y	200	160	180	220	224	140
Z	80	70	60	40	31	138
A	35	50	40	20	25	36
B	15	10	20	30	35	10

(a) In the year 1990, how much percentage Y gained.
1990 లో, పార్టీ Y ఎంత శాతం స్థానాలను గెలుచుకుంది?

(i) 74 (ii) 64

(iii) 80 (ii) 100

(b) When compared to before years, how much profit got for A in the year 1995?
క్రిందటి ఎన్నికల కంటే, 1995 లో పార్టీ A ఎంత శాతం వృద్ధిని సాధించింది?

(i) 35 (ii) 76

(iii) 44 (iv) 82

(c) By combining all, how many party's win A when compared to B?
ఎన్నికలన్నింటికి కలిపి, పార్టీ B కంటే పార్టీ A ఎన్ని స్థానాలు ఎక్కువ గెలుచుకుంది?

(i) 100 (ii) 52

(iii) 86 (iv) None (ఏదీ కాదు)

(b)

(d) In the year 1975, how many seats got B for Y?

1975వ సంవత్సరంలో Y కు వచ్చిన సీట్లలో, B కు వచ్చిన సీట్ల శాతం ఎంత?

(i) 6.25 (ii) 7.3

(iii) 14.32 (iv) 7.25

(e) In the year 1990, how many seats got X?

1990 లో పార్టీ X కు వచ్చిన సీట్లు ఎన్ని?

(i) 100 (ii) 90

(iii) 80 (iv) None (ఏదీ కాదు)

UNIT II

2. 11:17::19:?

(a) 29 (b) 27

(c) 25 (d) 21

3. Education : Teacher :: Treatment :?

(a) Medicine (b) Nurse

(b) Doctor (d) Clinic

4. Army: Soldier :: Galaxy :?

(a) Planet (b) Star

(c) Universe (d) Meteor

5. 3,5,9,17,33, ?

(a) 49 (b) 48

(c) 63 (d) 65

6. 5,14,27,44,65, ?

(a) 109 (b) 90

(c) 88 (d) 180

UNIT - III

7. $\frac{1}{4} : \frac{1}{8} :: \frac{1}{3} : ?$

(a) $\frac{1}{7}$ (b) $\frac{1}{4}$

(c) $\frac{1}{6}$ (d) $\frac{2}{6}$

(7)

8. $3: 3\frac{3}{8} :: 5 : ?$

(a) $5\frac{5}{8}$ (b) $5\frac{3}{8}$

(c) $5\frac{1}{8}$ (d) $2\frac{5}{8}$

9. $\frac{1}{81}, \frac{1}{54}, \frac{1}{36}, \frac{1}{24}, ?$

(a) $\frac{1}{81}$ (b) $\frac{1}{9}$

(c) $\frac{1}{16}$ (d) $\frac{1}{18}$

10. 18,17,26,51,?

(a) 150 (b) 130

(c) 120 (d) 140

11. P3 C, R 5F, T 81, V 12L?

(a) Y 17 O (b) X 17 M

(c) X 17 O (d) X 16 O

UNIT IV

12. The average of first five multiples of 3 is

3 కు మొదటి 5 గుణిజాల సగటు

(a) 3 (b) 9

(c) 12 (d) 15

13. Sum of first 30 natural number

మొదటి 30 సహజ సంఖ్యల మొత్తం

(a) 470 (b) 468

(b) 465 (d) 463

14. Reeya obtained 65,67,76,82 and 85 out of 100 in different subjects, what will be the average.

రియా కు 100 కు 65,67,76,82 మరియు 85 వచ్చినవి, సగటు ఎంత?

(a) 70 (b) 75

(c) 80 (d) 85

15. Average of 10 numbers is zero. At most how many numbers may be greater than zero

10 సంఖ్యల సగటు సున్నా. ఎన్ని సంఖ్యలు సున్నా కన్నా ఎక్కువ?

(a) 0 (b) 1

(c) 5 (d) 9

16. Average of all Prime numbers between 30 to 50

30 నుండి 50 సంఖ్యల మధ్యగల ప్రధాన సంఖ్యల సగటు

(a) 37 (b) 37.8

(c) 39 (d) 39.8

UNIT V

17. The cost price of 20 articles is the same as the selling price of X articles. If the profits is 25%. What is X?

ఒక వస్తువు యొక్క అసలు ధర 20 మరియు అమ్మిన వెల X అయిన లాభ శాతం 25%, X ఎంత?

(a) 15 (b) 16

(c) 18 (d) 25

18. If selling price is doubled, the profit triples. Find profit percent.

అమ్మిన వెల రెట్టింపు మరియు లాభం మూడు వంతులు అయిన లాభశాతం ఎంత?

(a) $66\frac{2}{3}$ (b) 100

(c) $105\frac{1}{3}$ (d) 120

19. Vendor bought toffees at 6 for a rupees. How many for a rupee must he sell to gain 20%?

ఒక వర్తకుడు రూపాయికి 6 టోఫి లను తెచ్చిన, అతనికి 20% లాభం చేకూరాలంటే ఒక రూపాయికి ఎన్ని టోఫి లను అమ్మవలెను?

(a) 3 (b) 4

(c) 5 (d) 6

20. A man buys a cycle for Rs. 1,400 and sells it at a loss of 15%. What is the selling price of the cycle?
ఒక వ్యక్తి సైకిల్ ను 1,400 రూ.కొని, 15% నష్టానికి అమ్మిన సైకిల్ యొక్క అమ్మిన వెల ఎంత?

(a) 1090 (b) 1160
(c) 1190 (d) 1202

21. A man buys an article for Rs. 27.50 and sells it for Rs. 28.60. Find his gain percent.
ఒక వ్యక్తి, వస్తువును రూ. 27.50 కొని, రూ. 28.60 అమ్మిన లాభ శాతమెంత?

(a) 1% (b) 2%
(c) 3% (d) 4%

SECTION – B (5x5=25 Marks)

Answer any FIVE of the following questions. Each question carries 5 Marks.

22. Explain types of Venn diagrams.
వెన్ చిత్రాల రకాలు వాటి ఆచరణల గురించి వివరించుము.

23. Explain BODMAS rule.
బోడామాస్ నియమాలు వ్రాయండి.

24. Find the HCF of 12,36,48
గ.సా.భా యొక్క 12,36,48 కనుగొనుము.

25. Explain profit, loss formulae.
లాభ నష్టాలు మరియు వాటి సూత్రాల గురించి వివరింపుము.

26. Explain Divisibility rules.
భాగిత సూత్రములను వివరింపుము.

27. Write about Pie Chart.
పై చిత్రము గురించి వ్రాయుము.

28. What is Analogy? And discuss types of Analogy.
ఆనాలజి అనగానేమి మరియు వాటిలో రకాలు వ్రాయండి.

29. Explain Simple Compound interest.
సామాన్య మరియు బారు వడ్డిలను వివరించండి.

DEPARTMENT OF MATHEMATICS

BOS MEETING APPROVED THE FOLLOWING LIST OF PAPER SETTERS FOR AUTONOMOUS

S.NO	NAME OF THE LECTURER	DESIGNATION	COLLEGE
1	Dr.A.Ananta lakshmi	Lecturer in Mathematics	P.R.Govt.College ,Kakinada.
2	Dr.P.Subhashini	Lecturer in Mathematics	P.R.Govt.College ,Kakinada.
3	Padmaja	Lecturer in Mathematics	GDC,Pitapuram.
4	Dr.B.Chitti Babu	Lecturer in Mathematics	GDC,Pentapadu, J.P.gudem,W.G.Dt.
5	Dr.Ch.Srinivasa Rao	Lecturer in Mathematics	GDC,Mandapet.
6	Ch.S.Haranadh	Lecturer in Mathematics	GDC,Aakiveedu, W.G.Dt.
7	P.Hari Krishna	Lecturer in Mathematics	GDC,Eluru.
8	G.V.Bhaskar	Lecturer in Mathematics	GDC for Women,Guntur.
9	M.Maha Lakshmi naidu	Lecturer in Mathematics	GDC(A),Tuni.
10	A.Surya Narayana	Lecturer in Mathematics	GDC(A),Rajahmundry.
11	BVN.Srirama murthy	Lecturer in Mathematics	GDC(A), Rajahmundry.
12	I.Lakshmi Gayatri	Lecturer in Mathematics	GDC(A), Rajahmundry.
13	S.Jaganmohan Rao	Lecturer in Mathematics	GDC, Jaggampeta, E.G.Dt.
14	V.Chitti Babu	Lecturer in Mathematics	GDC, Ramachandraraopeta.

16/3/2018 16/3/2018 16/3/18

SRR & CVR GOVT. DEGREE COLLEGE
(Autonomous)
NAAC accredited with 'B' Grade
Machavaram, Vijayawada – 520 004, Krishna District.
Cell: 94922 34488 Ph: 0866-2430060 Fax: 0866-2441092 www.srrcvr.org srrandcvr@gmail.com

Dr. Velaga Joshi, Principal
M.A.(Phil.), M.A.(Hist.), M.A.(M.C.J.), B.L., M.Phil., Ph.D.

To

12-03-2018

Prof. Bhavanari Satyanarayana,
Head of the Department of Mathematics,
Acharya Nagarjuna university,
Guntur.

Sir,

Sub: 1.SRR&CVR Govt.College (A), Vijayawada-Board of Studies-
Meeting Schedule 16-03-2018- intimation-Regarding.

2. To approve syllabus for 3rd ,4th Semesters and 4th sem Analytical skills (UG) ModelPaper, blue print, panel of paper setters & Examiners, Internal Assessment components, Minimum pass mark as per CBCS pattern.

Ref: No. K.U. Nominee to G.B/BOS/A.C/SRR&CVR.COLLEGE- VJA.

I am pleased to inform you that you are nominated as Krishna University, University Nominee for UG BOS Mathematics of Our College. The Board of Studies is scheduled to meet at the Dept. of Mathematics & Statistics of our College, Vijayawada on 16-03-2018.

Therefore I request you to attend the BOS meeting by 3:00 noon on 16-03-2018 positively.

Thanking you

Principal

PRINCIPAL
SRR & CVR GOVT. DEGREE COLLEGE
(Autonomus)
Machavaram, VIJAYAWADA - 520 004.

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16/3/2018

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NAAC accredited with 'B' Grade
Machavaram, Vijayawada – 520 004, Krishna District.
Cell: 94922 34488 Ph: 0866-2430060 Fax: 0866-2441092 www.srrcvr.org srrandcvr@gmail.com

Dr. Velaga Joshi, Principal
M.A.(Phil.) M.A.(Hist.) M.A.(M.C.J.) B.L. M.Phil. Ph.D

To

12-03-2018

Dr. S.Eswaraiah Setty,
Reader & Head of the Department of Mathematics,
Principal,
S.G.S College,Jaggaiah pet,
Krishna Dist.

Sir,

Sub: 1.SRR&CVR Govt.College (A), Vijayawada-Board of Studies-
Meeting Schedule 16-03-2018- intimation-Regarding.

2. To approve syllabus for 3rd, 4th Semester and 4th sem Analytical skills (UG) Model Paper, blue print, panel of paper setters & Examiners, Internal Assessment component, Minimum pass mark as per CBCS pattern.

Ref: No. K.U. Nominee to G.B/BOS/A.C/SRR&CVR.COLLEGE- VJA.

I am pleased to inform you that you are nominated as Krishna University, Subject Expert for UG BOS Mathematics of Our College. The Board of Studies is scheduled to meet at the Dept. of Mathematics & Statistics of our College, Vijayawada on 16-03-2018.

Therefore I request you to attend the BOS meeting by 3:00 noon on 16-03-2018 positively.

Thanking you

Principal

PRINCIPAL
SRR & CVR GOVT. DEGREE COLLEGE
(Autonomous)
Machavaram, VIJAYAWADA-520 004

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Eswaraiah Setty

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Machavaram, Vijayawada – 520 004, Krishna District.
Cell: 94922 34488 Ph: 0866-2430060 Fax: 0866-2441092 www.srrcvr.org srrandcvr@gmail.com

Dr. Velaga Joshi, Principal
M.A.(Phil.), M.A.(Hist), M.A.(M.C.J.), D.L., M.Phil., Ph.D

To

12-03-2018

Sri. G.V.Bhaskar ,
Head of the Department of Mathematics,
Government Degree College for Women,
Guntur.

Sir,

Sub: 1.SRR&CVR Govt.College (A), Vijayawada-Board of Studies-
Meeting Schedule 16-03-2018- intimation-Regarding.

2. To approve syllabus for 3rd , 4th Semester and 4th sem Analytical skills (UG) Model Paper, blue print, panel of paper setters & Examiners, Internal Assessment component, Minimum pass mark as per CBCS pattern.

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Thanking you

Principal
SRR & CVR GOVT. DEGREE COLLEGE
(Autonomous)
Machavaram, VIJAYAWADA - 520 004

Received copy
G.V.Bhaskar

Form No: AC 1

SRR & CVR GOVERNMENT DEGREE COLLEGE (AUTONOMOUS)
Vijayawada 520004

Attendance Certificate

This is to certify that Prof./~~Dr./Sri/Smt.~~ prof. Bhavanarisatyanarayana

Professor/~~Associate Professor/Assistant Professor~~/Director, Department/Centre of _____

Mathematics of A.N.U, Guntur ~~College~~/University/~~Institution~~

attended the BoS/Academic Council/Governing Body meeting held in the college on 16/3/2018.

16/3/18

Signature of the
Chairman, BoS/
Secretary, Academic Council

Signature of the
Chairman, Governing Body
Chairman, Academic Council