3.3.3

3.3.3 Number of books and chapters in edited volumes/books published and papers published in national/international conference proceedings per teacher during last five years (10)

Academic Year: 2016-17

Shri Shivaji Education Society, Amravati's

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3.3.3 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years (10)

S. No.	Name of the teacher	Title of the book/chapters published/ Title of the paper	Page Number
1	S. W. Dighe and P. P. Umale	Aquatic fossil flora of Deccan Intertrappean beds of MohgaonKalan MP India : A review	1
2	K. N. Puri	Basic Principles of NMR and Mass spectrometry	6
3	K. N. Puri	Basic Principles of UV-Visible and Infrared spectroscopy	8
4	Dr. D. N. Besekar	Object Oriented Programming with C++ & web technology	10
5	Dr. D. N. Besekar	PL/SQL & Advance Visual Basic	12
6	Dr. A. J. Deshmukh	Multi-Modulus Adder Implementation and its Applications.	16
7	Dr. A. J. Deshmukh	Simulation and Study of Cardiac Disorders.	24
8	Dr. S. B. Sawarkar	A Test book of Physics Kinetic theory ,Thermodynamics and Electric currents B.Sc-I-Sem-II	31
9	Dr.V. H. Hiware	Literature Creating Role Models for Women: Reference to R. C. Shukla's The Parrot Shrieks	35
10	Mr. S. S. Pohare	Aakanksha (Char Ekankika)	46
11	Prof. K. N. Deshmukh	Gharana Tradition in Music	51
12	Shirish V. Kadu	Role of Mathematics In Indian Classical Music	59
13	Shirish V. Kadu	Baul: The Devotional Music Transends the Religion	62
14	Prof. Vishal Vijay Korde	Gharana Parampra me Vivad	65
15	Dr. J. H. Pawar	Bhartiy Rajkarnatil Mahila Sahbhagache badlte Swrup	71

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GERMANY

CONTENTS

AQUATIC FOSSIL FLORA OF DECCAN INTERTRAPPEAN BEDS OF MOHGAONKALAN, M.P., INDIA. -A REVIEW

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Abstract

The Deccan Intertrappean flora is mostly known from central India and is unique in the sense that all the groups of the plant kingdom, ranging from algae to angiosperms, The rocks were formed as a result of the solidification of molten lava that erupted successively through fissures in the earth's crust. The present review includes the reported aquatic flora from Deccan Intertrappean beds of M.P., India. Which is considered as Late Cretaceous period flora. The most of the specimens studied are found to be having large air cavities suggesting its aquatic nature and hydrophytic habitat of Deccan Intertrappean beds.

Keywords- Aquatic, Deccan, Flora, Intertrappean, India.

Introduction

The Cretaceous is defined as the period between 145.5 and 65.5 million years ago,* the last period of the Mesozoic Era, following the Jurassic and ending with the extinction of the dinosaurs (except birds). By the beginning of the Cretaceous, the supercontinent Pangea was already rifting apart, and by the mid-Cretaceous, it had split into several smaller continents. This created large-scale geographic isolation, causing a divergence in evolution of all land-based life for the two new land masses. The rifting apart also generated extensive new coastlines, and a corresponding increase in the available near-shore habitat. Additionally, seasons began to grow more pronounced as the global climate became cooler. Forests evolved to look similar to present day forests, with oaks, hickories, and magnolias becoming common in North America by the end of the Cretaceous.

At the end of the Cretaceous Period, 65 million years ago, an asteroid hit Earth in the Yucatan Peninsula, Mexico, forming what is today called the Chicxulub impact crater. It has been estimated that half of the world's species went extinct at about this time, but no accurate species count exists for all groups of organisms. Some have argued that many of the species to go extinct did so before the impact, perhaps because of environmental changes occuring at this time. Whatever its cause, this extinction event marks the end of the Cretaceous Period and of the Mesozoic Era

The Cretaceous period of the Indian stratigraphy is the most wide spread and at the same time lithologically most complex period. It includes rock formations under entirely different conditions during the some geological time and noticed in different areas of India. Geological India is divided into three segments (Wadia, 1960).

1. Peninsula
Peninsula forms a triangular plateau in South of sub-continent jutting out in the Indian ocean. It includes Shillong plateau of Assam at North-East and cutch-Kathiawar region at the West (Dey-1968).

2. Extra-Peninsula
Extra-Peninsula includes the Himalayan mountainous region and its offshoot on the north-west and north-east of subcontinent.

3. Indo-Gangetic Plain
Indo-Gangetic plain includes area between Peninsula and the extra-Peninsula.

In India, volcanic rock formation occurred in late Cretaceous or early Eocene period which is known as Deccan Traps. It covers an area of 77,220 sq. kilometers. In the word of Prof. Sahni "An Episode of Tertiary Era" Deccan Trap is the greatest volcanic formation in Indian geology. It is thought that towards the end of Cretaceous period subsequent to the deposition of Bagh and the Lameta beds, a large part of Peninsula was affected by stupendous outburst of the volcanic energy, resulting in the eruption of lava in large quantity and associated pyroclastic materials (Pascoe, 1950). This eruption proceeded from fissures and cracks in the surface of earth, from which highly liquid lava come out intermittently, till a thickness of some thousand feet of horizontal sheet of basalt of igneous origin had resulted, obliterating all the previously existing topography of the country and converted into large volcanic plateau. This consists of a

vast area, particularly Maharashtra (approx ¾ region), Madhya Pradesh, Gujarat and Andhra Pradesh (1/4 region). This formation of basalts is known as 'Deccan Traps' in Indian geology. According to West (1959) the only comparable formation to the Deccan trap took place in 1787 in Iceland. Since then no fissure eruption like Deccan trap is known till present time.

The Deccan Traps of central and western India represent the largest volcanic event in the country since the Triassic . The rocks were formed as a result of the solidification of molten lava that erupted successively through fissures in the earth's crust. The sedimentary beds deposited during the quiescent intervals between two flows are called intertrappean beds. The Deccan Intertrappean flora is mostly known from central India and is unique in the sense that all the groups of the plant kingdom, ranging from algae to angiosperms, are represented in it. Angiosperms, the most dominant group in the flora are equally represented by both monocotyledonous and dicotyledonous taxa. The age of the Deccan Traps has long been a question of debate and considerable work has been carried out on the duration and age of the Deccan volcanism. It has been fairly well established that the volcanism had an extended duration of 69–61 million years, with a peak eruption between about 67 and 65 million year

Deccan trap is 2000-3000 m thick along the west coast of Bombay, 150 m thick at Amarkantak and Surguja, 90 m thick at Chhindwara, 30-42 m at Mohgaonkalan and Palodon (Sahni and Rode, 1937) and 45 m at Nagpur (Pande, Surynarayan and Deshpande, 1969). While near Belgaum the southern limit of trap is about 60 m thick. Sind has minimum thickness of 30-60 m. According to Fermor (1926) in Bhusaval region it shows 29 flows. Each flow has 4-30 m thickness.

The Deccan Intertrappean flora is unique in the sense that it includes a large number of plant fossils, representing almost all groups of plant kingdom. This flora can be considered as the parental stock of the modern Indian flora. The recorded fossil flora was inhabitant of tropical forests as most of the genera exist in the evergreen to semi-evergreen forest of Western Ghats - North-East India. The abundance of palms and plants such as *Barringtonia, Calophyllum, Cocos, Nypa, Sonneratia* along with other moist tropical taxa indicating swampy, littoral, tropical condition with close proximity of sea (Guleria, 2005).

Permineralized sporocarps and vegetative parts resembling the extant leptosporangiate aquatic fern genus *Salvinia* are described from the Late Cretaceous Deccan Intertrappean locality at MohgaonKalan,

Chhindwara District, Madhya Pradesh, India. Considering the morphological and anatomical variations the fossils are assigned to a new genus and species *Salvinitis deccaniana*. Microsporocarps of a new species of *Azolla, A. deccaniana* are also preserved in the same chert. (Nambudiri and Chitaley 1991). The presence of marshy habitat with some lakes and ponds can be visualized based on presence of fossils like *Eichhornia, Nympheacaulon ,Enigmocarpon* and *Tricoccites* (which show presence of air spaces),some bryophytes and water ferns . Regarding Palaeobiodivercity,Trivedi and Chandra (1971)reported palm leaves with air chambers under *Palmophyllum sp* . Mohgaonkalan, a Intertrappean fossiliferous locality in the Deccan lies, in

Chhindwara district..The flora consist of all major groups of plant kingdom , suggesting different habitat Some are reported from the same locality and shows arenchymatus tissue which are leaves of *Aerophyllites intertrappea* (Chitaley and Pati,11971), *Thallasiophyllum mahabalei* (Kokate,P.S.,2010) *Typhophyllites ganeshii* (Kokate,P.S.,2012).) *Potamogetnophyllites intertrappea (Kokate,* et al, 2014), petiridophytic *petiole of Fillicophyllites deccanensis, fruits of Plectroniocarpon intertrappease* (Kokate, et al, 2009), *Pyrenocarpon harisii*(Thorat, Kokate & Pundkar.2014)

Discussion

The structural features of present fossil specimen indicate that it is with fleshy outer layer and stony inner layer i.e. endocarp means it is a drupaceous fruit. Further observation of fruit wall shows that the middle layer i.e. mesocarp of fruit is with fibrous strands and fibrous vascular bundles. Which may help in the identification of fruit that must be from monocotyledonous category. So for comparison we consider only monocotyledonous extant families having drupaceous fruits. While fossil leaves in the present study consisting large air cavities suggesting its aquatic nature. In the present study number of fossil fruits and seeds are reported . Most of the fossil fruits are drupaceous and capsular in nature *Plectroniocarpon* and *Scaevolacarpon* are drupaceous fruits with fibrous mesocarp having air chambers suggesting their dispersal by water and the plants to which they belong must have been growing in coastal areas or near other water bodies. The Deccan Intertrappean flora (Maastrichtian) is very rich in monocotyledonous remains with the dicots in comparison with the other Cretaceous or early Tertiary horizons. In India, the

monocotyledons are dominated by *Arecaceae* followed by *Scitaminae, Poaceae Araceae, Liliaceae, Cyperaceae, Agavaceae* and *Pandanaceae*. Palms are dominating. The monocotyledonous fossil flora are represented by organ genera for stem, root, leaf, inflorescence, rachilla, flower, fruit, seed and pollen grains. In the present study drupaceous fossil fruit *Pinangocarpon* from the family *Palmae* is reported. The presence of monocotyledonous leaves from the Deccan Intertrappean beds of India is very common. In the present investigation *Thalassiophyllum* from *Hydrocharitaceae* family and *Typhophyllites* from *Typhaceae* are reported. These reports are included on the basis of fossil evidences collected from upper Maastrichtian sediments of Netherlands .Both the fossil leaves show the presence of air cavities which indicates that there might be small shallow lakes at these localities during fossilization.

The report of monocotyledonous leaf ptyxis *Musophyllites* shows the aerenchymatous tissues with four arcs of dumbell shaped vascular bundles with typical *Scitaminean* type, which strongly suggests its amphibian nature and tropical climate of Deccan Intertrappean beds of India. Thus, the conclusion in general can be infered that the climate was warm to support the assessment of palaeoecology of the locality as mesophytic vegetation growing in the vicinity of sea and fresh water marshes. Likewise some characteristic features of angiospermous genera from the Deccan Intertrappean beds suggests the presence of tropical evergreen to semi evergreen forest.

The age of the Deccan Trap has been a matter of controversy, since long. Earlier, some geologists, regarded them as upper Cretaceous while other considered them to be early Eocene. However, the present view is that volcanic activity in Deccan started in Uppermost Cretaceous and continued intermittently until late Eocene. The bulk having erupted in early Eocene (Krishnan, 1968) consequently a major part of Deccan Intertrappean flora can be regarded as early Eocene.
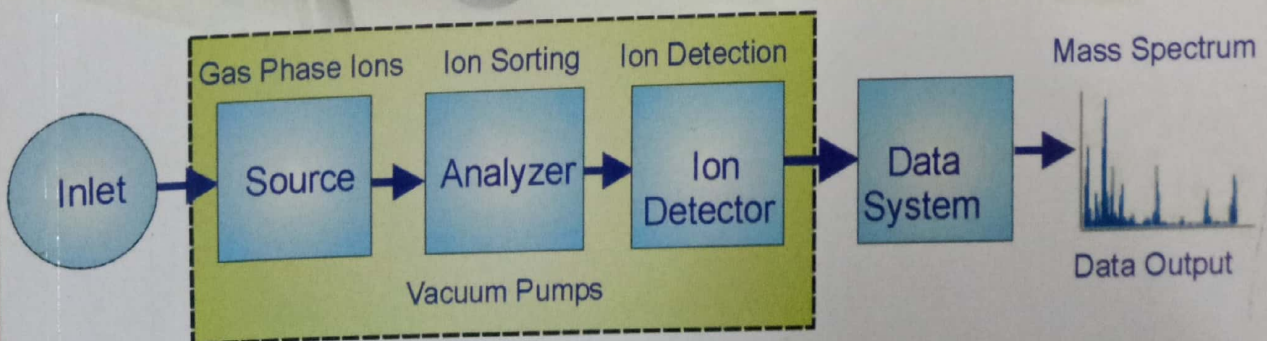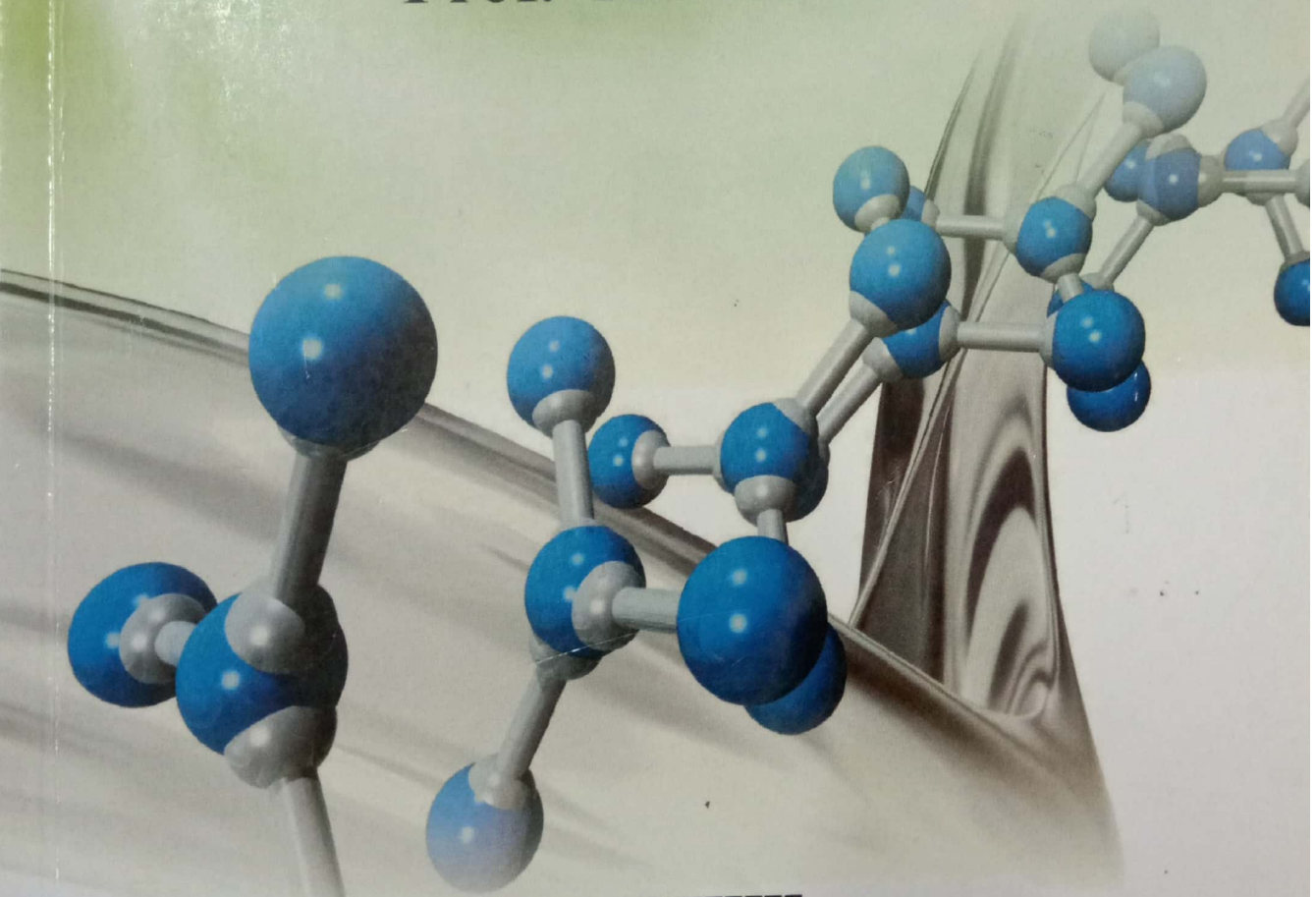
Conclusion

Palaeobotanically dominant flora of Angiosperms is considered to be an evidence of Tertiary age. However, Angiosperms had reached a position of abundance even in the Upper Cretaceous. It is quite possible as already stated by some geologists that the Deccan Traps started accumulating towards the close of the Cretaceous and continued into Tertiary. Thus, the age of some Intertrappean like those of Nagpur-Chhindwara area which are in the lower Trap formation are younger than those of the Bombay-Worli area which are in the later stages of formation.

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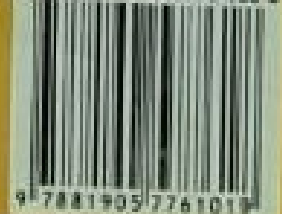Research Experience : 5 years

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PL/SQL and Advanced Visual Basic

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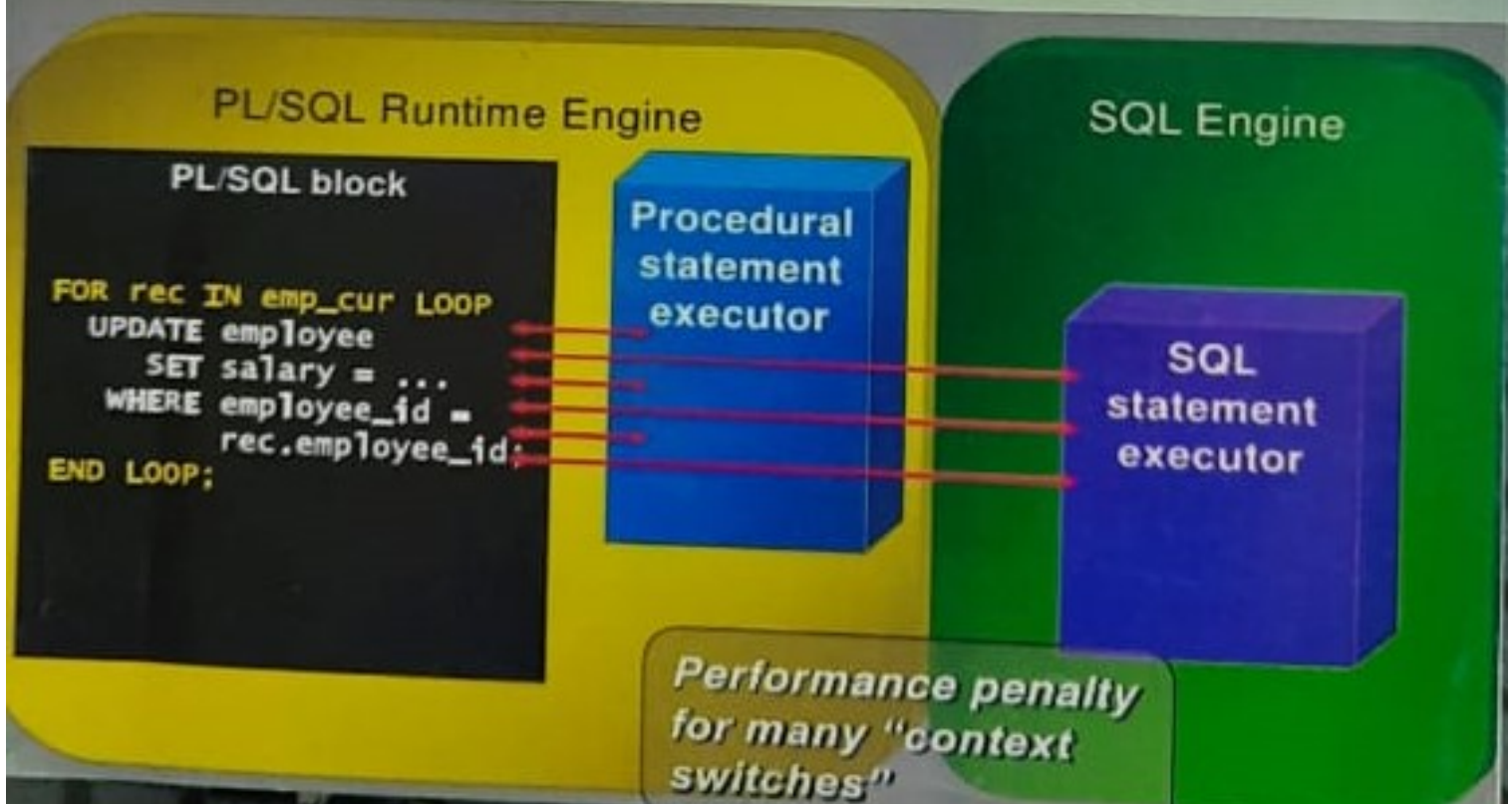Mr. P. S. Bodkhe   Mr. S.M.Kharbade

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A TEXT BOOK OF COMPUTER SCIENCE
B.Sc.III Semester VI

PL/SQL and Advanced Visual Basic

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Preface

Since last so many years it is the continuous demand of students to have a perfect text book as per the yearly or semester pattern for the curriculum of Computer Science subject of **S.G.B. Amravati University, Amravati.** Because it needs to refer various books for collecting matter for one subject/paper, which founds to be a tedious job for the students. Unfortunately no one dare to come out.

But, with the keen interest and continuous encouragement of our beloved Chairman of Board Of Studies in Computer Science, **Dr. P.N. Mulkalwar,** the dream came in to existence in the form of this book.

We feel great pleasure in presenting this book , which is specially designed to meet the syllabus of B.Sc. Part-III Semester VI of Computer Science of S.G.B. Amravati University, Amravati.

Being the text book, the contents of this is presented in a comprehensive way using simple language instead of question answer form, so that the student should master the concept and then apply it. Along with it contents, the book also includes solved problems, examples, programs, diagrams and tables. At the end of each chapter, the questions like fill in the blanks , MCQ's and short & long answer type questions are given, which help the students for prepartion of exams.

We thank our Author come Editor **Dr. P.N. Mulkalwar** for their continuous encouragement and suggestions during the writing of this book. We sincerely thanks Nabh Prakashan, Amravati the publisher and his staff for bringing out this book at short notice. The students and teachers are always welcome for their suggestions.

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Multi-Modulus Adder Implementation and its Applications

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Abstract— The parallel prefix adders has wide applications in operation of arithmetic computations specially in multi-modulus applications in order to achieve high speed, compact area and time efficiency. Two architectures of multi-modulus adders that support the most common module cases in RNS channels, that is, modulo $2^n -1$, 2^n and $2^n + 1$ are implemented. The architectures that performs parallel prefix carry computation units are composed of log2n levels. The experimental results shows that the implemented adders are significantly faster and/or lesser in area. The new Multi-modulus subtractor and multiplier is proposed that rely on the use of the implemented multi-modulus adders. The aim of this project is to implement proposed work experimentally and compare their performance with existing module in respect to area, power and delay.

Keywords- Kogge Stone Adder, Ladner Fischer, Residue number system(RNS), Parallel prefix computation, Parallel-prefix adder(PPA).

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I. INTRODUCTION

The Arithmetic Operation is very important in our day to day life. All the arithmetic work is carried on addition, subtraction, multiplication and division. Basically addition is used as a reference and using addition technique all other techniques of subtraction, division and multiplication can be carried out. As, subtraction can be computed by the addition of a number and two's complement of the other number, similarly is the multiplication and division is carried out. So adder contributes to the fundamental model.

It depends upon the adder that is how efficiently adder has been developed to carry addition effectively with minimum power, delay calculations. The parallel prefix adder plays a very important role in developing such adders with all its constraints meet in power, delay calculations. Basically two adders has been implemented in this paper Kogge stone adder[2] and Lander-Fisher[4] adder. Kogge stone adder[2] uses its fewest logic levels for implementation and lander-fischer [4]is used for high performance addition operation. The introduction to the RNS (Residue number System)[3]has also been included in this paper.RNS system consists of three channels 2^n, 2^n-1,2^n+1[1]. In this modulo 2^n arithmetic can be straight forwardly applied from the given arithmetic results upto n bits but the design of 2^n+1 and 2^n-1 plays very important role as they are of special importance and has a wide application in designing any multi-modulo adder .while the design of 2^n-1 is performed in the regular way, modulo 2^n+1 operation is complex operation ,therefore it is performed using diminished-1[1] operation in modulo 2^n+1 .Use of modulo 2^n+1 in adder[5] plays important role in adder while addition of a number in zero operand. The objective in

developing is reduction in carry-chain path for the adder computation, Area reduction for N-bit parallel adder design with efficient outcome, Time delay constrain in carry propagation minimization for high speed computation. Power can be reduced by minimizing the computational block.

II. RELATED WORK

2.1 Architecture for Modulo 2^n+1 arithmetic:

Modulo of 2^n+1 arithmetic has found very wide applications in various fields specially in cryptography. These modulo is a part of the residue number system which consists of three channels 2^n, 2^n+1, 2^n-1. Basically RNS [1]is an arithmetic number system which divides a number into residues (parts) and performs arithmetic operations concurrently for each residue (parts), and it does not need any carry propagation among them. Because of these it has increased the speed over various binary operations. Among the three channels in RNS arithmetic systems, modulo 2^n is obtained in straight forward way limiting upto n bits and 2^n-1is complicated then, 2^n but not as 2^n+1, in 2^n-1 zero values are taken into consideration while in 2^n+1, this has to deal with operands one bit wider than the other two, to avoid this difficulty diminished-1[1] representation is used, so that it can be used for consideration of zero operands in 2^n+1. In diminished-1 level operand is represented as $a_z A$, where a_z is a single bit, which is often used for indicating the zero value, and A is an n-bit vector and called as the number part. A diminished -1 representation allows to limit the operation upto n bits, where A_{nor} is normal weighted representation which belongs in the range from 0 to 2^n , and it is in diminished -1 notation represented by a_z and A= A_{nor}-1, when A_{nor} is not equal to zero else if we have to

_____

represent zero values of A_{nor}, we have to use the combination $a_z=1$ and $A=0$ .The following cases is used to determine the sum of the diminished-1 adder :

1. Diminished-1 adder module is used when both the inputs a_z and b_z are not equal zero, their number parts A and B are added.
2. Result is equal to non-zero operand when any one of both the inputs is zero.
3. Result is zero when both operands are zero.

Taking care of diminished-1 representation for 2^n+1 addition, an extra carry look ahead adder block[2] is added along with integer adder. This carry look ahead block used to compute carry. After inverting, obtained carry is given as carry input to integer adder. In implemented IEAC along with parallel prefix adder some extra logic levels are included in order to avoid race around conditions. Although these adders avoids race around conditions, use of an extra logic level makes them slower as compared to their corresponding parallel prefix adder. It is shown that recirculation of carry of is computed in same parallel prefix adder so that we can avoid use of extra prefix level [1] in order to make addition faster. But it may increase area as several carry computation required separate parallel prefix adder for carry computation unit.

Although these adders are complex in area but are advantageous over other for speed and hence are widely used in many applications like multiplication, subtraction, squarer, excess-3[4] code converter etc. It is shown that we can use two adders simultaneously in order to compute carry and addition separately to increase the speed of operation but results in more area. So it is shown that hybrid multiplier can be used in order to reduce area.

III. BACKGROUND

1. Parallel prefix computation

The most basic block of any digital logic circuit is adder. In most of the case performance of adder decides the overall performance of the system however the performance of adders becomes critical as number of bits increases. There are many straight forward linear adders like ripple carry adder but the major disadvantage of these adders is that they are very slow. Thus to improve the speed of operation slight changes in algorithm of carry look ahead adder[5] as well as carry select adder for carry propagation are done in order to improve speed but results in increases area as well as complexity.

a. Parallel prefix adders:-

Parallel prefix adders [1] uses simple cell implementation and maintain uniformity in logic connectivity.
Frequent use of adder in arithmetic operations results in high power consumption which affects the reliability of circuit. High power dissipation results in the form of excessive heat generation in circuit. In order to solve this cooling circuit is required which increases the cost of the circuit. In order to

maintain reliability low power and high speed computational circuit is required .and these specifications are achieved using parallel prefix adders.

Performance of adder in perspective with area and power can be improved using parallel prefix adder and hence its use is always preferable for high speed applications. Parallel prefix computation is performed in three necessary steps which are shown below
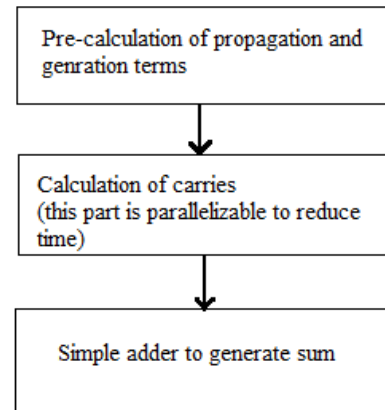

Fig.1. Structural flow diagram of Parallel prefix Adder

Parallel prefix adder [1] is similar carry look ahead adder. The rotation of the carries in parallel prefix adder can be designed in different ways to perform addition in more optimized way to get minimized power and delay. Parallel prefix adder reduces delay and used for high performance arithmetic structures in industries. The parallel prefix addition is done in three steps as mentioned below.

1. Pre-processing stage
2. Carry generation stage
3. Post processing stage

1. Pre-processing stage

In this stage carry generation bits g_i, carry propagation bits p_i, and half sum bits h_i for every n bit is calculated.

$$g_i = a_i . b_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..(i)$$
$$p_i = a_i \oplus b_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(ii)$$

Where, $\oplus$ denote logical AND, exclusive-OR respectively.

2. Carry generation stage

This stage computes the carry signal. Execution is done in parallel form. After the computation of carries in parallel they are divided into smaller pieces. Carry operator contains two AND gates, one OR gate. It uses propagate and generate as intermediate signals.

$$p_{(i:k)} = p_{(i:j)} . p_{(j-1:k)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots..(iii)$$
$$g_{(i:k)} = g_{(i:j)} + (g_{(j-1:k)} . p_{(i:j)}) \ldots\ldots\ldots\ldots\ldots\ldots(iv)$$

Carry computation stage can be transformed into parallel prefix problem using o operator, which is associated with pairs of generation and propagation and is defined as

206

$$(g_{(k:j)}, p_{(k:j)}) = (g_k.p_k) o (g_{k-1}, p_{k-1}) o ....o(g_j, p_j)……….(v)$$

Since every carry $C_i = g_i:0$, three algorithms have been implemented to compute carry using only o operator.

3. Post processing stage

This final stage is used to compute summation of input bits. It is same as all adder and final sum is computed using following equations

$$S_i = P_i \oplus C_{i-1}…………………………………(vi)$$

$$C_{i-1} = (P_i . C_0) + g_i…………………………………(vii)$$

Some of the parallel prefix adders are Kong-Stone parallel prefix adder, Lander-Fisher adder, Brent-Kung adder, spares-4 parallel prefix adder, Spanning carry look ahead adder.

The basic cells those are used to implement all parallel prefix adders basic blocks are shown below-
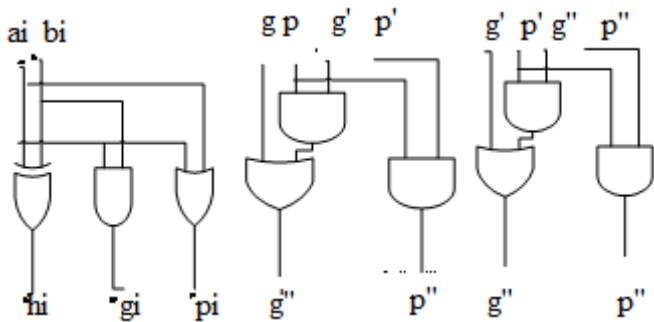

Fig. 2.The logic-level basic cells in parallel-prefix adders

b. Kogge –Stone Parallel prefix adder:-

This type of parallel prefix adder uses least logic levels among all parallel adders. KS adder[2] is fast adder design as it generates carry in $O(\log_2 N)$ time but has large area and minimum fan-out. Basic architecture of KS adder is as shown below

No of carry stages:- $\log_2 N$
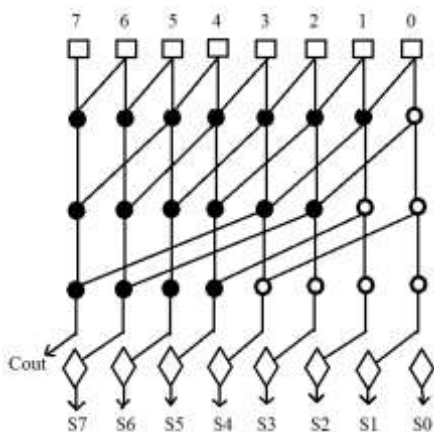Total number of cells:- $n\log_2 n$
Maximum fan-out :- 2

Fig.3. 8-bit Kogge-stone parallel prefix structure for integer adder

The ◊ symbol in the diagram indicates simple integer addition and ● indicates carry propagation which is used as input to the next block of carry calculation terms while ○ indicates final terms of middle stage which is directly given as input to final adder stage.

c. Lander-Fischer Adder:-

This architecture sits between Brent-Kung adder[8] and spanning tree[9]. This uses less number of logic block but has large fan-out. In this adder case instead of carry propagation carry overlap operation is performed. Delay for this adder is given by $\log_2 n + 1$.

No of carry stages:- $\log_2 N$
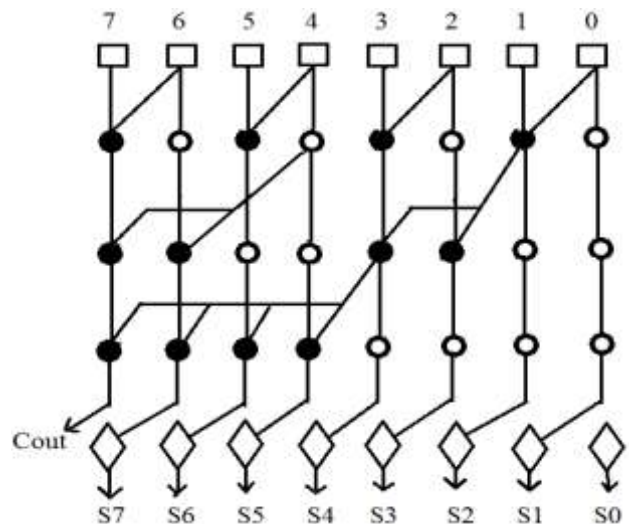Total number of cells:- $(n/2)\log_2 n$
Maximum fan-out :- $n/2$

Fig.4. 8-bit Ladner-Fischer PPA structure

d. Sparse Adder:-

As number of bits increases above adders becomes more complicated and hence these adders can be replace by sparse adder as it significantly reduces area and complexity of logic without compromising delay. Sparse adder[8] design mainly consists of parallel prefix adder along with carry select blocks which are used to compute carry. As carries are calculated only at the boundary of blocks it significantly saves the area required for carry computation. Figure shows the 16-bit sparse adder with bit carry select block. As carry select block computes carry for 4-4 bits above adder is called as sparse-4 parallel prefix adder. Depending upon the required constraint we can select the cs-blocks[8] with more inputs. This block consists of multiplexer which is used to select carry depending upon carry input of previous stage which is given as select line to the multiplexer used. Combinational logic diagram of carry select block is as shown below.

In this adder we are using carry save block which avoids race around conditions. In carry save blocks two outputs are generated and are given to multiplexer which selects the

Shri Shivaji College of Arts, Commerce and Science, Akola   Page 20 of 76

required the output depending upon carry which is acting like select line for multiplexer. The block of CSA is shown in fig 5
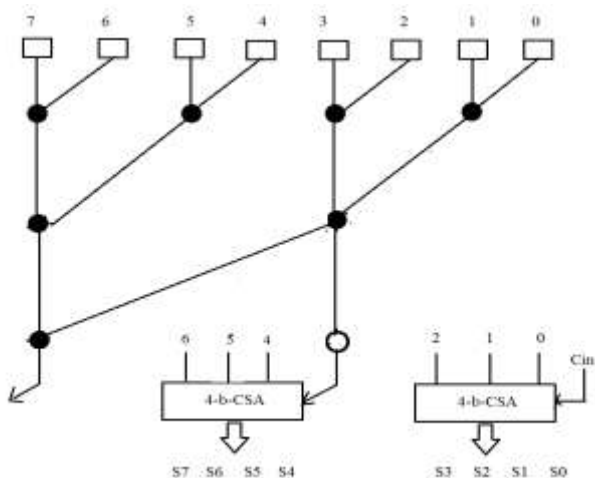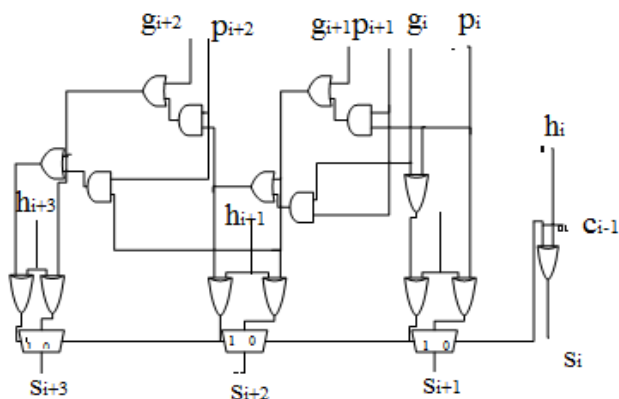

Fig.5. Structure of 8-bit SPP adder

Fig.6. Logic Levels of Carry save Block

IV.   METHODOLOGY & IMPLIMENTATION

1.   Multi-modulus Subtractor

To perform multi-modulus subtraction[1], it needs to be divided into three different cases as follows:

a. 2^n arithmetic: $R = |B-A|_{2^n} = |B+\bar{A}+1|_{2^n}$ where $\bar{A}$ is bitwise complement of A.

b. 2^n-1 arithmetic: $R = |B-A|_{2^n-1} = |B+(2^n-1)-A|_{2^n-1}$

c. 2^n+1 arithmetic: $R = |(B+1)-(A+1)-1| = |B+(2^n-1)-A+1|_{2^n+1} = |B+\bar{A}+1|_{2^n+1}$

So from above three cases, multi-modulus subtracter can be implemented using all the above adders simply by complementing A. As described above modulo 2^n case required to add one along with complementation of A. so by modifying equation used for calculating generation and propagation term.

$g_0 = (a_0 \wedge b_0) \& \sim(n/m)|a_0 \& b_0$……………
$p_0 = a_0 \wedge b_0 \wedge \sim(n/m)$……………………..
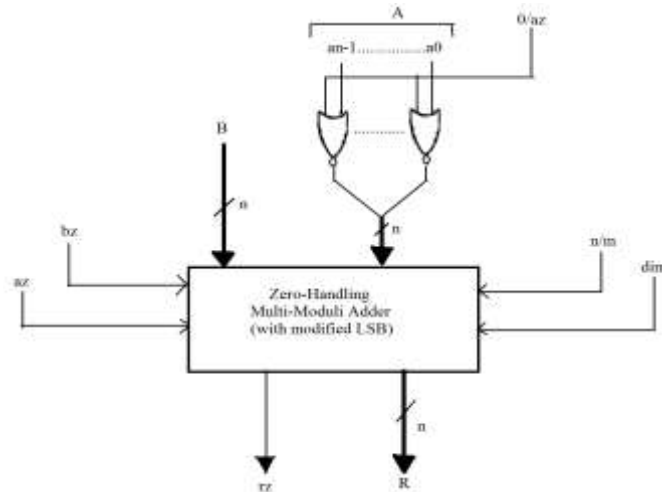where $(n/m)=0$ for modulo 2^n

Fig. 6. Structure of Multi-modulo subtractor

2.   Multi-modulus multiplier

Multiplication is one of the important intensive and core function in arithmetic operations. Multiplier serves as basic building block of many DSP Processors and also efficiently used in Image Processing. It computes the significant product result but it also highly contribute to time delay in systems. Hence the overall performance of system is depends on the multiplier computation. Multiplication and squarer functions are used significantly in applications like DSP, multimedia and image processing [3]-[4].

Generally multiplication is carried out as the repetitive addition of multiplier upto multiplicand while shifting the bits in every 'n' number of cycles. This is what the conventional number systems are multiplied with adding and shifting process, consumes time delay in computation.

Parallel multipliers are highly efficient for the design constrains of chip area, power dissipation and the speed of operation. In parallel multipliers number of partial products to be added is the main parameter that determines the performance of the multiplier. Hence to reduce number of partial products to be added and to achieve speed of operation different parallel multipliers architectures were designed like Booth multiplier algorithm, Wallace tree multiplier[6], series-parallel architecture, Braun array multiplier.

The proposed architecture in this project for multiplication is subjected to the 8 bit parallel multiplication, which is carried out with repetitive addition of operand over the multiplicand value. The 8 bit multiplication gives the resultant product of 16 bit output. In this architecture the 16 bits are split up into two 8 bits. The lower 8 bits are computed with the repetitive addition 8 bit operand using the parallel prefix adder over and over till the last computation stage. And remaining 8 bits appended as the computation of carry addition in the last product bits. The carry occurred in every stage is appended with the rest of zero bits and is carried ahead to add with the next carry occurred bit in the following stage.

It is advantageous over existing multipliers as it involves parallel multiplication. In existing module requires adders with different bits and hence there is increase in area as well as power. While in proposed multiplier same adder is repeated

again and again which reduces the area as well as power at the cost of slight increase of delay.

In proposed multiplier we are comparing the multiplier and multiplicand and if multiplier is less than multiplicand is added multiplier times to get the resultant eight bits in LSB while remaining eight bits are calculated simply by adding carry if exist. Algorithm for proposed multiplier is as shown below-
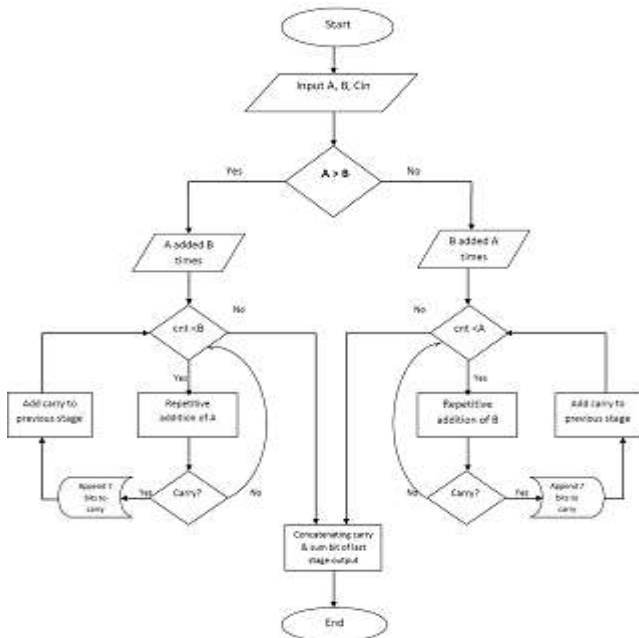

Fig.7. Data flow diagram of proposed Multiplier

V. RESULT

All the computations of the parallel prefix adders are simulated and analyzed on ModelSim-Altera 10.1d (Quartus II 13.1) tool. The generated verilog outputs implemented with the tool. The resultant power of the Adders and subjected multiplier using parallel prefix adder is complied and anlysed with Powerplay powe analyzer. To study detail area and power calculation we have implemented above adders in cadence and simulation is performed.

The computation results of all mentioned parallel prefix adders for 8-bit computation is found as-
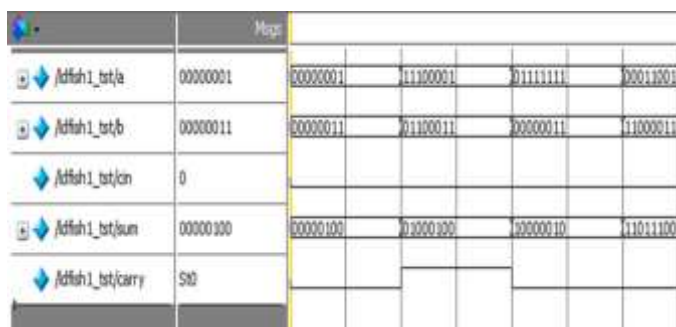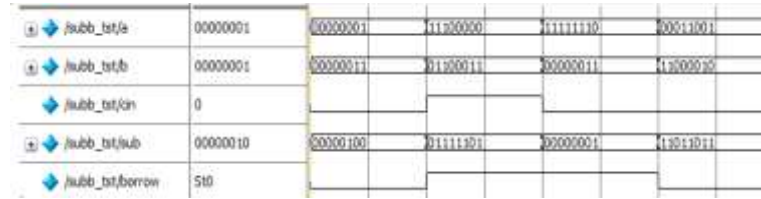

Fig. 8. Simulation result of Adder

Fig. 9. Simulation result of Subtractor

Fig. 10. Simulation results of Multiplier

n= 8 bit	Area	Delay	Power
KS Adder	1544	372	0.528
L-F Adder	1376	364	0.217
SPP	1201	337	0.446

Power is calculated in mW, delay psec while area is in um^2.

VI. CONCLUSION

Here we compare SPP, KS adder and lander fischer adder and proposed multiplier with existing. The main parameters to compare any circuits are delay, power, and area obtained from architecture. There are two types of power dissipation in the circuit which are static and dynamic. Out off these two dynamic power plays an important role as it depends on switching action taking place due to change in input.

Kogge stone adder and lander ficsher adder offers almost similar execution speed.fanout offered by ks-adder is 2. While that of ld- adder is (n/2). But this increase in fanout results in increased number of prefixed operator and which results in more routing i.e wiring complexity. From timing analysis we can comment that SPP can save delay and we can say that, this reduction in delay is obtained due to implemented carry is getting overlapped instead of carry propagation from one stage to next stage. As in SPP [2] replace carry computational unit by multiplexer. But it should be noted that SPP is also a type of parallel prefix adder but removal of critical path for carry save delay for large word-length number. We can perform many combinations for carry propagation path in order to reduce delay. In implemented SPP fan-out is limited to 2 as well as size of carry save block is limited to 4.

Now we can go for finding area efficiency of different adders. It mostly depends on number of input bits. We can comment that lander fischer adder is preferable over kogge stone adder. While implemented SPP provides lowest area of all for increasing number of bits. It means SPP decreases the number of calculations of prefix operators. Similarly we can draw conclusion about various multi-modulo about power dissipation in architecture and it is noted that power dissipation in circuit is directly proportion area required to

implement architecture assuming same operating frequency for all circuit under comparison.

In above paper we have proposed a new multiplier in which we are performing multiplication by repeating addition for n number of time and carry and multiplication is computed simultaneously. Which significantly reduces area, As it has been proven that area and power are highly correlated, we can conclude that power is reduced significantly.

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Simulation and Study of Cardiac Disorders

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Abstract— The examination of the ECG has been comprehensively used for diagnosing many cardiac diseases.The growing health concerns, especially for cardiac disorders reflect on the need of developing a simple inexpensive and portable ECG system. In the present work, a simple ECG simulator module has been developed using LabVIEW that displays ECG wave of various cardiac disorders related sinus and nonsinus arrhythmias. The ECG wave is recorded and analyzed using LabVIEW software. The better analysis of the ECG can help doctors to give the appropriate care to the patients and also helps to avoid various severe situations that may arise.

Keywords- *ECG; Cardiac disorder; Heart Rate; arrhythmia; LabVIEW*

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I. INTRODUCTION

ECG is an important biomedical parameter and is used clinically in diagnosing various diseases and conditions associated with the heart. Cardiovascular diseases (CVD) are a disease that involves the heart or blood vessels. Most countries face high and increasing rates of cardiovascular disease. Each year, heart disease kills almost 2.6 million people which constitute 54.1% of all CVD deaths in India by 2020. Cardiovascular diseases are the world's largest killers, claiming 17.1 million lives a year [1]. Cardiac healthcare is the fastest growing market as cardiovascular disease is the leading cause of death in the world. Among the various medical or healthcare information, ECG is best way to measure and diagnose abnormal conditions of the heart. It is a painless, inexpensive and measuring quantity and thus ECG has become one of the most preferable vital in the area of healthcare.

The state of cardiac heart is generally reflected in the shape of ECG waveform and heart rate. ECG, if properly analyzed, can provide information regarding various arrhythmia diseases related to heart. Clinical observation of ECG can take long hours and can be very tedious. Moreover, visual analysis cannot be relied upon and the possibility of the analyst missing the vital information is high. Hence, computer based analysis and classification of heart diseases can be very helpful in diagnosis.

The Electrocardiogram (ECG) provides the valuable information regarding the cardiovascular diseases. ECG is a test that measures the electrical activity of the heart. The morphology and heart rate reflects the cardiac health of human heart beat. It is a non invasive technique that means this signal is measured on the surface of human body, which is used in identification of the heart diseases. Any disorder of heart rate or rhythm, or change in the morphological pattern, is an indication of cardiac arrhythmia, which could be detected by analysis of the recorded ECG waveform. The amplitude and duration of the P-QRS-T wave contains useful information about the nature of disease afflicting the heart.

II. NORMAL ECG

The electrical wave is due to depolarization and re polarization of Na+ and k-ions in the blood. Amplitude and duration of PQRST waves correspond to electrical power fluctuation in entire heart. An ECG signal is therefore presented by using a graph, where the y-axis represents voltage and the x-axis represents time. Any abnormalities in the heart rate can be monitored by analyzing the graphs. The R-R interval is referred as the interval from the peak of one QRS complex to the peak of the next in an electrocardiogram as shown in figure1. The R wave is usually chosen to do this because it is the tallest and most conspicuous. In most rhythms, the R-to-R interval will be the same as the P-to-P distance, or the distance between any two analogous points on consecutive beats.
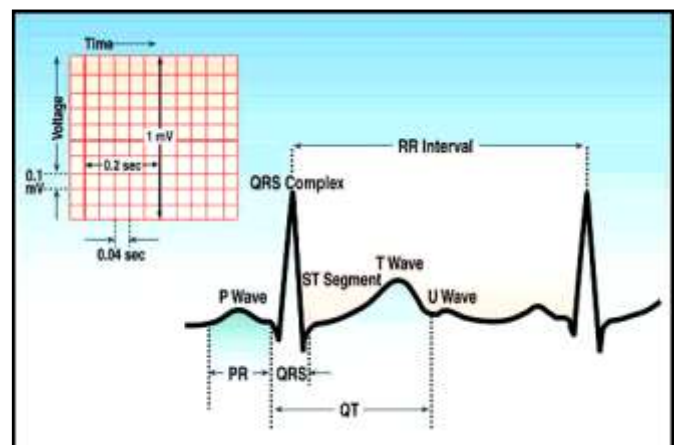

Figure 1 ECG waves and intervals [2]

Normally the frequency range of an ECG signal is 0.05– 100 Hz and its dynamic range – of 1–10 mV. The ECG signal is

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characterized by five peaks and valleys labeled by the letters P, Q, R, S, T. In some cases we also use another peak called U. The performance of ECG analyzing system depends mainly on the accurate and reliable detection of the QRS complex, as well as T and P-waves. The detection of the QRS complex is the most important task in automatic ECG signal analysis. Once the QRS complex has been identified a more detailed examination of ECG signal including the heart rate, the ST segment *etc.* can be performed [3].

Standard values of normal ECG is shown in table 1.

Parameters	Amplitude (mv)	Parameters	Duration (Sec)
P-Wave	0.25	P-R Interval	0.12 to 0.20
R-Wave	1.60	Q-T Interval	0.35 to 0.44
Q-Wave	25% of R-wave	S-T Segment	0.05 to 0.15
		P-Wave interval	0.11
T-Wave	0.1 to 0.5	QRS-interval	0.09
U-Wave	May be or may not be exists		
Heart Rate	60 to 100 bpm		

Table 1: Standard values Normal ECG Waveform [4]

III. MATERIAL AND METHOD

Normal ECG done in clinical setting allows monitoring and recording but gives no analytical results. Available data analysis algorithms are complicated, as they do not implement transparent decision procedure The better analysis of the ECG can help doctors to give the appropriate care to the patients and also helps to avoid various severe situations that may arise.

The growing health concerns, especially for cardiac disorders reflect on the need of developing a simple inexpensive and portable ECG system. In the present work, a simple ECG simulator module has been developed using LabVIEW-11 that displays ECG wave of various cardiac disorders related sinus and nonsinus arrhythmias. The ECG wave is recorded and analyzed using LabVIEW software.

IV. LABVIEW - A GRAPHICAL PROGRAMMING

The software package LabVIEW (Laboratory Virtual Instrument Engineering Workbench) is a commercial product from National Instruments and runs on several host machines (PC, Macintosh, or Sun workstations). LabVIEW is a powerful graphical development environment for signal acquisition, measurement analysis, and data presentation, giving the flexibility of a programming language without the complexity of traditional development tools.

LabVIEW is a graphical programming language that uses icons instead of lines of text to create programs. Unlike text based programming language, LabVIEW uses the data flow programming, where the flow of data determines execution. The flexibility, modular nature and ease to use programming possible with LabVIEW, makes it less complex [5]. LabVIEW is a graphical programming environment which has become widespread throughout research labs, academia and industry. It is powerful and versatile analysis and instrumentation software for measurement and automation [6]. Since the LabVIEW is software oriented, it offers more flexibility than standard laboratory instruments. Because of their appearance and operation imitates the physical instruments, the LabVIEW programs/codes are called virtual instruments (VIs). LabVIEW is designed to facilitate data collection and analysis, as well as offers numerous display options. With data collection, analysis and display combined in a flexible programming environment, the desktop computer functions as a dedicated measurement device. The LabVIEW contains a comprehensive set of VIs and function for acquiring, displaying, and storing the data, as well as the tools since it will support users to troubleshoot the code [7].

LabVIEW has been developed as an environment for the design of virtual instruments (VI). It uses symbols, terminology and formats that are familiar to technicians, scientists, and engineers. LabVIEW is programmed to act as an interface, helping pieces of hardware "communicate" with each other. Moreover, LabVIEW offers built-in libraries that allow the user to work over the internet and use different programming formats and systems.[8].

V. LITRETURE REVIEW

Various contributions have been made in literature regarding detection and classification of ECG Arrhythmias. Most of them use either time or frequency domain representation of the ECG waveforms, on the basis of which many specific features are defined, allowing the recognition between the beats belonging to different classes.

A fahoum *et.al,* [9] has analyzed the work dealing with classification problem of four different arrhythmias: NSR – normal sinus rhythm, AF-atrial fibrillation, ventricular fibrillation(VT)and ventricular tachycardia(VT), RPS. Nonlinear dynamical behavior of the ECG is used to identify the cardiac arrhythmias. This algorithm shows that sensitivity and specificity are within range of 87.7-100%. The classification accuracy is 100% for VF arrhythmia.

P. G. Patel *et.al,* [10] studied the Pen Tompkins Algorithm, efficient method for ECG Signal Analysis which is simple and has good accuracy and less computation time. For analysis the ECG signals from MIT database are used. The peak detection is very important in diagnosis arrhythmia which is proved as tachycardia, bradycardia, asystole, second degree AV block. The results show that from detected QRS peaks, arrhythmias which are based on increase or decrease in

the number of QRS peak, absence of QRS peak can be diagnosed

V Mahesh *et.al,* [11] has studied the discrete wavelet transform, heart rate variability and logistic model tree. This LMT classifier to classify 11 different arrhythmia and results obtained 98% accuracy.

BekirKarhket *et. al,* [12] carried out artificial Neural network of ECG signal analyzed in the time domain thus corresponding arrhythmias are determined by using ANN, around 95% result is achieved for identification of arrhythmia.

Sarkalehet *et. al,* [13] has done the discrete wavelet transform and neural networks with DWT is used for processing ECG recording and extracting some arrhythmia and neural network perform classification task. This method is 96.5% accuracy.

VI. THE APPLICATION AREAS OF ECG DIAGNOSIS

Heart disease is a general term for a number of different diseases which affect the heart such as the left ventricular hypertrophy (LVH), right ventricular hypertrophy (RVH), myocardial ischemia, myocardial infarction and bundle branch block. Heart disease is one of the leading causes of death in the world.

The main application of the ECG to cardiological diagnosis includes the following as shown in Figure 2[14].
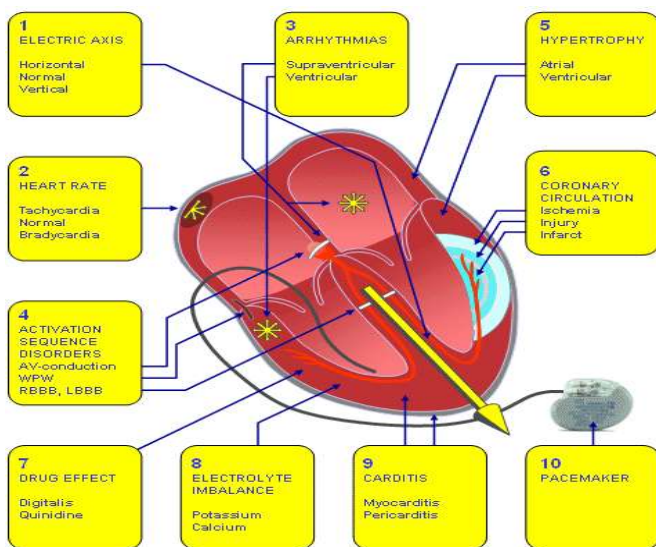

Figure 2 Applications of the ECG to cardiological Diagnosis[15]

A. Supraventricular rhythms
Cardiac rhythms may be divided into two categories:
i) Supraventricular (above the ventricles)   and
ii) Ventricular rhythms.
The origin of supraventricular rhythms (a single pulse or a continuous rhythm) is in the atria or AV junction, and the activation proceeds to the ventricles along the conduction system in a normal way.

B. Normal sinus rhythm (NSR)

The normal rhythm of the heart where there is no disease or disorder in the morphology of ECG signal is called Normal sinus rhythm (NSR). The heart rate of NSR is generally characterized by 60 to 100 beats per minute. The regularity of the R-R interval varies slightly with the breathing cycle.
- Impulses originate at SA node at normal Rate
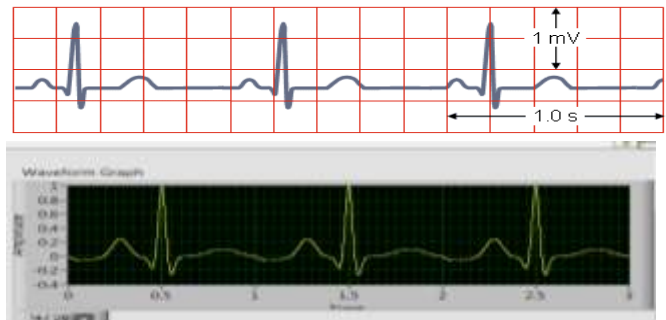- All complexes are normal, evenly spaced, Heart rate 60-100bpm

Figure 3 Normal sinus rhythm (Theoretical and Simulated)

C.Sinus atrial rhythm
This type of arrhythmia arises from the SA node of heart. As the electrical impulse is generated from the normal pacemaker, the characteristic feature of these arrhythmias is that P wave morphology of the ECG is normal. These arrhythmias are the following types: Sinus bradycardia, Sinus *tachycardia* and Sinus arrhythmia, etc.

I). Sinus bradycardia

If the heart rate is too slow then this is known as bradycardia and this can adversely affect vital organs. Impulses originate at SA node at slow Rate
- All complexes are normal, evenly spaced, Heart rate <60bpm
- This may be a consequence of increased vagal or parasympathetic tone

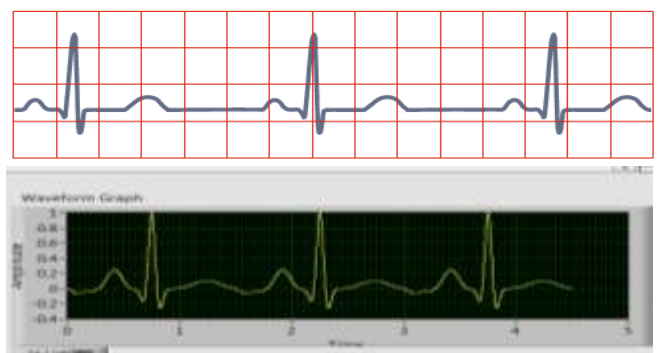Figure 4 Sinus bradycardia

II). Sinus tachycardia

When the heart rate increases above 100 beats per minute, the rhythm is known as sinus tachycardia. This is not an

Shri Shivaji College of Arts, Commerce and Science, Akola   Page 28 of 76

arrhythmia but a normal response of the heart which demand for higher blood circulation. When the heart rate is too fast, the ventricles are not completely filled before contraction for which pumping efficiency drops, adversely affecting perfusion.

- Impulses originate at SA node at rapid Rate
- All complexes are normal, evenly spaced, Heart rate >100bpm
- It occurs most often as a physiological response to physical exercise or psychical stress, but may also result from congestive heart failure.
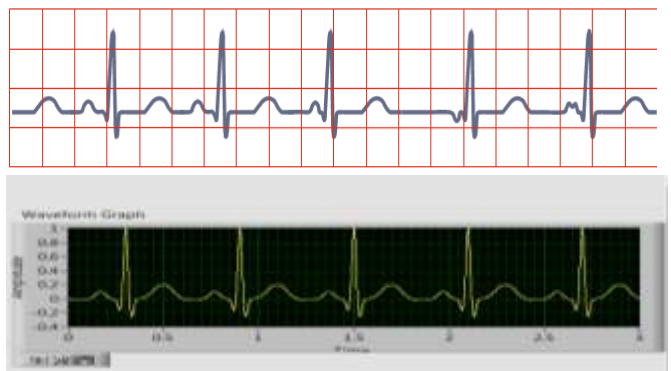

Figure 5 Sinus tachycardia

III). Sinus arrhythmia

- Impulses originate at SA node at varying Rate
- All complexes are normal, rhythm is irregular
- Longest RR interval exceeds shortest > o.16 sec.

Figure 6 Sinus arrhythmia

D. Nonsinus atrial rhythm

The origin of atrial contraction may be located somewhere else in the atria other than the sinus node. If it is located close to the AV node, the atrial depolarization occurs in a direction that is opposite the normal one. In the ECG the P-wave has opposite polarity. These arrhythmias types are given bellow;

I). Wandering pacemaker

Impulses originates from varying points in atria or wander. Consequently, the P-waves will vary in polarity, and the PQ-interval will also vary.

Figure 7 Wandering pacemaker

II). Atrial flutter

When the heart rate is sufficiently elevated so that the isoelectric interval between the end of T and beginning of P disappears, the arrhythmia is called atrial flutter. In atrial flutter, the atrial rate is very fast, ranging from 240 to 360 per minute. The abnormal P-waves occur regularly and so quickly that they take morphology of saw-tooth waveform which is called flutter (F) waves.

- Impulses travel in circular course in atria
- Rapid fluter waves, ventricular response irregular
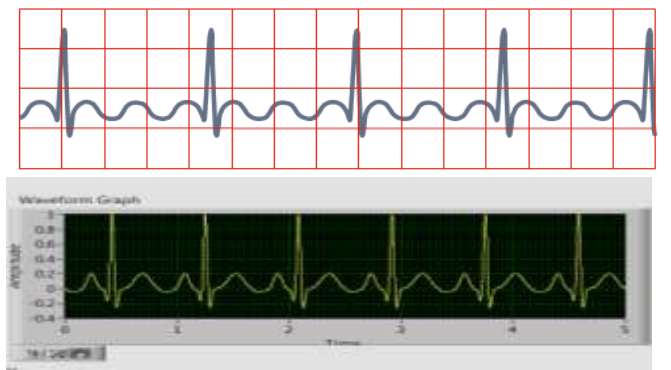- The frequency of these fluctuations is between 220 and 300/min.

Figure 8 Atrial flutter

III). Atrial fibrillation

The atrial rate exceeds 350 beats per minute in this type of arrhythmias. This arrhythmia occurs because of uncoordinated activation and contraction of different parts of the atria. The higher atria rate and uncoordinated contraction leads to ineffective pumping of blood into the ventricles. Atrial fibrillation may be intermittent, occurring in paroxysms (short bursts) or chronic

- Impulses have chaotic,random pathwayes in atria
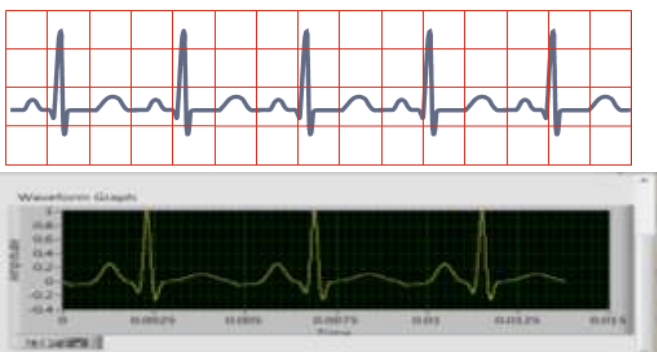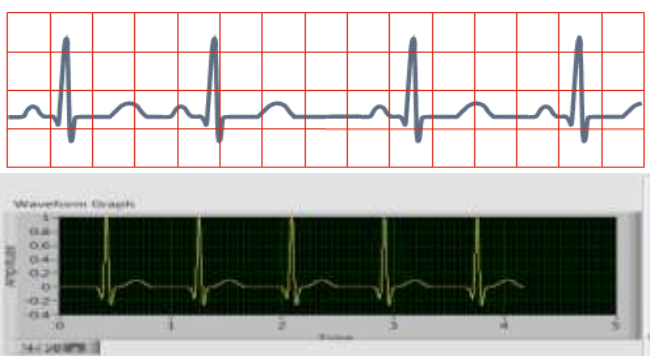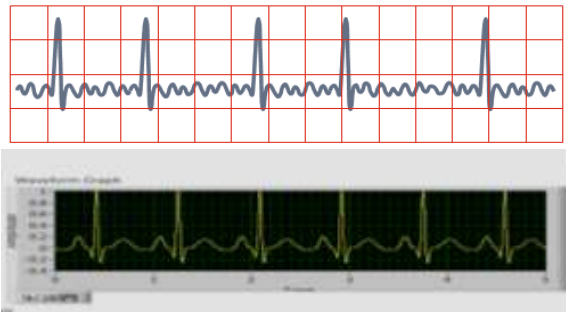- Baseline irregular, ventricularresponse irregular

Figure 9 Atrial fibrillation

IV). Junctional rhythm

Junctional arrhythmias are originated within the AV junction in the form of the impulse comprising the AV node and it's Bundle. The abnormal in P wave morphology occurs because of these arrhythmias .The polarity of the abnormal P-wave would be opposite to that of the normal sinus P-wave since depolarization is propagated in the opposite direction – from the AV node towards the atria.

If the heart rate is slow (40-55/min), the QRS-complex is normal, the P-waves are possibly not seen and then the origin of the cardiac rhythm is in the AV node. Because the origin is in the junction between atria and ventricles, this is called junctional rhythm.

- Impulses originate at AV node with retrograde and antegrade direction

- P-wave is often inverted, may be under or after QRS-complex
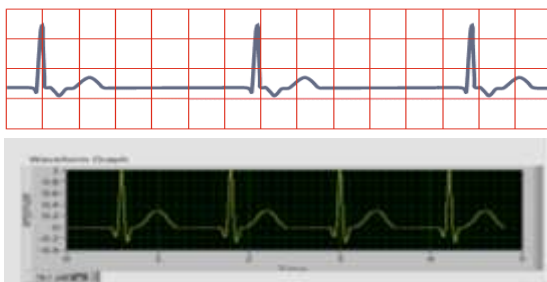
- Heart rate is low

Figure 10 Junctional rhythm

VII. COCLUSION

The information obtained from an Electrocardiogram can be used to discover different types of heart diseases. The automatic detection of ECG waves is important to cardiac disease diagnosis. Presently, many Cardiologists face difficulty in making a correct diagnosis for ECG arrhythmia diseases. In addition to this also conventional technique of visual analysis is more complicated and requires experience and time. Clinical observation of ECG can take long hours and can be very tedious. Moreover, visual analysis cannot be relied upon and the possibility of the analyst missing the vital information is high. Hence, computer based analysis and classification of Arrhythmia diseases can be very helpful in diagnosis.

As studied from existing literature ECG arrhythmias accuracy are about 90 to 98% as well as detection algorithms are more complicated, but because of flexibility, modular nature and ease to use programming possible with LabVIEW, makes it less complex and more reliable. Thus with the help of LabVIEW software a simple ECG simulator module has been developed that displays ECG wave of various cardiac disorders related sinus and nonsinus arrhythmias as shown in figure 3 to 10. The ECG wave is recorded and analyzed using LabVIEW software is more accurate and helpful for better analysis of ECG. Thus software makes the system cost efficient and can be utilized as a test bench for the study of ECG signals with more interactive and simplicity.

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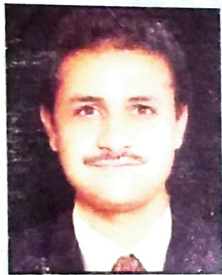Research Experience : Since 1995

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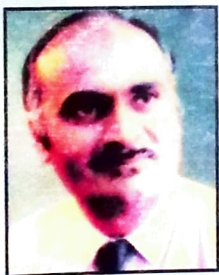Teaching Experience : Since 1998
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ENGLISH PART - III

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Literature Creating Role Models for Women: Reference to R. C. Shukla's *The Parrot Shrieks*

28

V. H. Hiware

Asso. Prof. & Head, Dept.of English, Shri Shivaji Arts, Com. & Science College, Akola.

Abstract

This paper deals with select love poems of R. C. Shukla which depict effect of creating women figure as role model called beloved with its characteristics-magical, mythical power of beauty as if a trick used with a specific purpose by the woman. The poet being born and brought up in Indian social milieu is quite familiar with the concept and aftermath of love affair. Attracted by her beauty, the lover tries to win the heart of his beloved at cost of everything-wealth, power and comfort. He reaches to the stage of a type of enslavement. He becomes blind after the false notion of love leaving a sound reason for the beloved not only to cheat him but also use him as a tool towards the fulfillment of her malign interest. This paper aims at the exploration of the portrayal of the woman which functions as if a projection in the line of providing a role model for the women who seems to be happy in her secondary status with a power in disguise.

In the tradition of Indian English, poetry R. C. Shukla shine out as a well-known poet of postmodern concern. His poetry collections include Darkness At Dawn, A Belated Appearance, Depth and Despair, My Poems Laugh, The Parrot Shrieks,The Parrot Shrieks II, The Parrot Shrieks III, Ponderings I, Ponderings II and Ponderings III. Though he has been writing poems in English for the last forty years, his first collection of English poems entitled Darkness at Dawn (1990) came very late. His second anthology entitled A Belated Appearance was published by Writers Workshop in 2000 and after that came his other anthologies- Depth and Despair (2001), My Poems Laugh (2002), The Parrot Shrieks (2003) and The Parrot Shrieks 2 (2005). He has been always an ardent admirer of T.S. Eliot, W.H. Auden, Shiv K. Kumar, Jayanta Mahapatra and Kamala Das. He is a genuine poet who is much worried over the decline of the cultural values because of the impact of the Western culture. He considers women as the carrier of cultural values and, so. respects truly Indian women who celebrate festivals and follow traditions and rituals in order to keep the Indian culture alive. He dreams of an ideal cultural world where justice, equality, samskar, peace, tolerance, and spiritual virtues will rule. It is also found that besides his prime concern to theme of love, Dr. R. C. Shukla, with his ambitious plans to contribute to the growth of Indian poetry in English, has endeavoured to distinguish himself with his communicative skills, his rich and new imagery and experimental forms of expression.

However, in his treatment of love, Dr. Shukla tries to explore lover's point of view in his anthology *The Parrot Shrieks*. The poet uses a man's bioscope to see and observe the unopened layers of a lover's heart and mind in this anthology. He also plunges into the psychology of a woman to understand her mystic personality and its resultant effect on the lover who is the poet himself. This doesn't mean he only ponders over the world of a woman; he through his vivid imagination also takes us to the world of man in love in his own way. Therefore, every poem of this poet is a unique experience in itself and gives a clear picture of the lover and his beloved in the form of monologue. His poems also depicts that woman is Maya- "the mysterious world of Maya" (25), which is a riddle for him; not only for him for all the people of this planet as he thinks: "Without any bias or prejudice, my experiences and observations coupled with my readings have led me to the conclusion that a woman is a great riddle ever to be really understood by a man however enlightened he may claim himself to be."2 One can make strenuous efforts to solve this riddle, but no avail; it would become more complex as time passes. In spite of that this riddle or Maya in the form of his lady love keeps him engaged throughout his life. He reverberates:

> My eyes are my support
>
> Through which
>
> I aspire to drink you again and again
>
> The desire that has an end is no desire at all. (13)

This endless desire of the lover for his lady love is just like "the rain without clouds" (13). In spite of that he has great hope to meet her again and lead fuller life as some day she would come to vivify the "silent waters" (13) of his soul. It seems that he is anxiously waiting for her- not for physical union but for the union of the souls. And the union of the two souls would fulfill his ultimate craving for everlasting joy or 'Anand'. But there is a problem in this process i.e. the lover has the impression that his meeting with her would be possible only in dreams as his lady love remains stubborn in her response to him.

The poet makes us think that a female does not understand a man's feelings and always lives in a different world of her own. It is not always true. Sometimes lack of communication or the right expression also gives the same feedback to him. Perhaps this is the reason due to which only the lover loses his lady love. The lady love is where she is. And she is where the lover could not physically reach at. The whole tragedy of this relationship comes this way, which clearly indicates that there is no mutual bonding between the two. And it creates doubts and uncertainties in the heart and mind of the lover:

> All these years
>
> The most precious years of my life
>
> I traversed through uncertainties
>
> Doubts and through disbeliefs. (21)

This doubt is also with the poet in "the religion of love" (21), the religion which perhaps he loves utmost. This seems controversial but not as such it is. It is only because he is "churning without any pause" (20) due to the unexpected departure of his lady love. He says:

> And yet
>
> On the eve of an event
>
> You left me alone
>
> Without any cause. (20)

He does not blame his beloved; he blames himself for this: "Poet / you chose to be wounded… Your separation is complete" (28). And it is his goodness that he prays for himself and for her in spite of her unexpected leaving. The poet is not always negative in his approach to the image of a woman. It is his failures or dissatisfaction that leads him to such conception. At a place, he gives full credit to a woman (his beloved) considering her 'the most meaningful thing', 'a rose of distinction', and 'a perfume beyond praise' (25) for him. It is his desire that sometimes becomes sick and he starts thinking negatively and it is again his desire that becomes pleasant and he starts thinking positively. It seems that he is led by his desire or craving not by his mind and soul and when he uses his mind and soul he perceives the truth:

> One day
>
> Accidently
>
> My desire grew sick
>
> It lost appetite
>
> Went on growing thinner and thinner
>
> And ultimately for want for your care collapsed.
>
> Then, under the umbrella of truth
>
> I suddenly learned that the sunlight walks
>
> Without any sound
>
> And the sky is not blue as it appears. (26)

The lover-poet comes to know that Maya cannot diminish the aura of truth. Where there is truth, there is no pain, no suffering and no shadow of Maya itself. Here he gets somewhat peace in the journey of his life. The realization of truth is possible only when one peeps into one's soul. This is a kind of satisfaction one can achieve in such adverse circumstances. This was a moment where one can see the lover at rest or at peace. But this is not the permanent thought of the poet. The poet again speaks about emotional bankruptcy and insensitivity from the side of his lady love:

> I was at a loss
>
> When I found no wave in your eyes

No fervor in your looks. (34)

And, therefore, he is forced to conclude her feelings for him:

All your statements were merely advertisements

And those healing sentences

Merely toys for innocent children to play. (34)

In nutshell, R. C. Shukla's poetry shows that there is lack of will power in the lady love as she does not convert her thoughts into words. He feels that reticence is armour of a lady and through this weapon she can hide her intentions and at the same time she can hurt other's self. Despite all the contradictions and intricacies of the relationship, the poet makes the lover feel that the existence of his lady love is his identity. He is incomplete without her. His life is meaningless without her. For him his own name has no importance without her. And it is she who makes his identity- his life complete and this completion would help him in achieving bliss in his life:

I loved you to celebrate myself

To vindicate my concept

And ultimately

To distinguish myself

In the crowded world. (41)

The poet admits that the lady plays the role of a navigator to him as she not only inspires him but also gives him strength to accomplish his task. He accepts:

I write poems not for renown

They are for you

To inform you

How you inspire

And how in the afternoon of life

Your appearance reminds

The rising of the sun….(41)

Moreover, the poet differentiates the personality of man and woman. He thinks that a woman always wins 'the game of love' (46) as she has the great 'amulet' as forbearance and through it she conceals her inner desire or in a way she can divulge everything, whereas a man is impatient by nature and discloses everything before the world without any delay. He says:

Woman's great amulet is her forbearance

Through which

She successfully hides

The skin of her desire

She is never in a hurry to divulge herself. (46)

This is a big difference between man and woman and it is this difference which creates barriers to the smooth flow of relationship between the two. At times, the poet leaves no stone unturned to criticize both the parties- man and woman. He thinks that most of the women are clever like fox and most of the men are greedy like dogs:

Woman, most of them,

Belong to the fox

While men are obsequious, greedy dogs

Wagging their tails

To the hope of a bone. (46)

The poet is of the opinion that his writing poems and loving his lady love lead him nowhere. His poems consumed his imagination and his patience is collapsed by the woman and he finds himself a man having no importance in the eyes of his lady love. Therefore, he loses his faith:

The poems consumed my fancy

And the woman my patience

And I'm still the same

The insignificant one. (47)

It is here the poet reaches at climax and his words resemble the words of P. B. Shelly: "Our sweetest songs are those which tell us of our saddest thoughts."3 He becomes a philosopher. He feels that love and pain are two parts of the same coin i.e. life. These two are the part and parcel of life better than a married couple. He states:

Love and anguish walk hand in hand

They remain clubbed

Better than those wedded. (49)

This pain becomes severe when he is alone. "Shukla feels and comprehends with a tremendous force the impact of loneliness and isolation that can corrode an individual and lead him very often to the brink of despair."4 Though loneliness leads one to despair, it, according to the poet, is splendid as it gives him an opportunity to contemplate and write something creative: A poet's loneliness is splendid/It is something poetical/Others lonely persons cannot contemplate.

To sum up, the shrieks of the parrot are in a way the negative motivation for the woman (beloved) who extracts cravings or desires of the lover who shares his painful experiences with the readers and through his expressions the readers come to know about his cravings i.e what he expects from his lady love and how

his expectations break down and how the lady love comes in his life and how she departs him on some day and how he controls himself through writing poems and what was his intention behind this love. He wanted to win his lady love not physically but mentally and this winning would result in the union of two souls for getting bliss or 'Anand' through the realization of the self.

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आकांक्षा शिक्षणाची. स्त्रियांसाठी ती तेवढीच कठीण मात्र, अशक्य नाही. त्याकरिता घराचा त्याग करावा लागला तरी चालेल. या शिक्षणातूनच स्त्री जातीला जिवंत ठेवण्याची आकांक्षा निर्माण झाली आणि ती पूर्ण करण्याचा विश्वासही.

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संगीत विभाग प्रमुख

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संचालक — विदर्भ संगीत ऑकेडमी, रामदास पेठ, अकोला.

घरानों की प्रथा संगीत के सभी विधाओं में पायी जाती है। जिस प्रकार गायन के घराने होते है, उसी प्रकार वादन तथा नृत्य के भी घराने मिलते है घरानों का अस्तित्व उत्तर भारतीय संगीत तथा दक्षिण भारतीय संगीत दोनों में पाया जाता है। उत्तर भारतीय संगीत में जिसे घराना कहा जाता है, दक्षिण भारतीय संगीत में वही 'सम्प्रदाय' कहलाता है। स्वर्गीय आचार्य बृहस्पति ने 'दाय' का अर्थ इस प्रकार बताया है की, सम अर्थात सम्यक अर्थात् भली—भाँति, प्र—अर्थात् प्रकर्षपूर्ण दाय अर्थात पूर्वजों से मिलने वाली सम्पत्ति, का ज्ञान अर्जित करना ही 'सम्प्रदाय' कहलता है। हमारे यहाँ इन्हीं को 'मत' अथवा 'वाद' के नाम से भी जाना जाता है। आज घराना शब्द का जो अर्थ हम समझाते हैं, उसकी प्राचीनता को एक शताब्दी से अधिक नहीं हुआ है, परन्तु वास्तव में ऐसा नहीं है, प्राचीनकाल में संगीत में हमें शिवमत, ब्रहमत तथा भरत मत जैसे विभिन्न सम्प्रदाय थे। इन सम्प्रदायों की संगीत तथा नाट्य के सम्बन्ध में स्वतंत्र एवं विशिष्ट मान्यताएँ थीं। दत्तिल, कोहल, मतंग तथा अभिनवगुप्त भरत सम्प्रदाय के अनुयायी थे। भरत, नन्दिकेश्वर, नारद तथा शारंगदेव, ये सभी प्रातःस्मरणीय संगीत शास्त्रकार थे तथा उनकी संगीत कला अपनी विशेषताओं के कारण अलग—अलग प्रकट होती थी। वर्तमान युग की परिभाषा के अनुसार ये थी अलग—अलग सम्प्रदायके प्रवर्तक माने जा सकते है। नाट्यशास्त्र में बताया गया है, कि भरत ने अपने एक सौ शिष्यों को नाट्य की शिक्षा दी। अतः यह कहा जा सकता है, कि यह घराना अथवा सम्प्रदाय प्रथा प्राचीनकाल से ही प्रचलित थी। सामवेद में भी दो प्रकार की शैलियों का वर्णन मिलता है। मार्गीसंगीत तथा देशीसंगीत। यदि इस दृष्टी से देखा जाय तो यह पद्धती वैदिक काल में भी प्रचलित थी।

घराना अथवा सम्प्रदाय गुरु तथा शिष्य के संयोग से बनता है। गुरु अपनी एक विशेष शैली, विकसित करता है तथा उस शैली के सूक्ष्म अंगो का परिचय अपने शिष्य को योग्यतानुसार करता है। उस शैली के सूक्ष्म तत्वों को ग्रहण करने की जितनी योग्यता शुरु में होनी चाहिए, उतनी ही योग्यता गुरु में शिष्य को उन सूक्ष्म अंगो में परांगत करने की भी होनी चाहिए। परम्परागत शिक्षण में शिष्य को भी यह अधिकार नहीं होता कि वह गुरु द्वारा दी गयी शिक्षा में कोई परिवर्तन करे। एक गुरु द्वारा जो शिष्य शिक्षित किया जाता है वह उस घराने के अनुयायी कहलाते हैं। हर घराने की अपनी अलग—अलग विशेषताएँ होती हैं तथा वही विशेषताएँ उस शिष्य समुदाय में दृष्टिगोचर होती है। उस शिष्य समुदाय में दृष्टिगोचर होती है। घराने किसी शिष्य को संगीत श्रवण करते ही श्रोता को यह आभास हो जाता है, कि वह अमुक उस्ताद का संगीत आज पुनःश्रवण कर रहा है! संगीत विद्या सदैव गुरुमुख द्वारा प्राप्त की जाती है। गुरु अपनी सारी शिक्षा शिष्य के हृदय तथा मस्तिष्क में उतार देता है, जिससे शिष्य का चिन्तन भी अपने गुरु के अनुरुप ही हो जाता है।

346

GHARANA TRADITION IN MUSIC

Specialities And Diversities In The Presentation Of Gharana's
घरानों के प्रस्तुतीकरण की विशेषताएँ तथा विविधताएँ!

डॉ. किशोर एन. देशमुख

संगीत विभाग प्रमुख

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346

उत्तर भारतीय संगीत में घरानों का बहुत बड़ा योगदान है। घरानों के कारण ही उत्तर भारतीय संगीत जगत् में ख्याल गायन शैली, ठुमरी शैली के अलग—अलग घराने है। इसी प्रकार वादन शैली के भी, जैसे सितार तथा तबला इत्यादि के अलग—अलग घराने है तथा नृत्य के भी अलग—अलग घराने हैं। चूँकि हर घराने की अपनी भिन्न भिन्न शैलियॉ तथा विशेषताएँ होती हैं। इसलिए हमें विभिन्न प्रकार के विशिष्ट संगीत के रसास्वादन का सौभाग्य प्राप्त होता है। धृपद धमार, ठुमरी दादरा, ख्याल इत्यादि अलग—अलग शैलियॉ हैं। जिस प्रकार धृपद गायन में अलग—अलग बानियों का स्थान रहा, उसी प्रकार ख्याल गायन में घराने रहे है। खयाल गायन के जन्म के बारे में मुहम्मद हुसैन शर्की १५ शताब्दी का नाम लिया जाता है, परन्तु इसका प्रचार व प्रसार मुहम्मदशाह रंगीले के युग के १८ वी शती दो महान संगीतज्ञों सदारंग व अदारंग द्वारा हुआ।

खयाल गायकी में आजकल ग्वालियर घराना, अतरौली घराना, आगरा घराना, किरांना घराना, भिंडी बाजार घराना, दिल्ली घराना, पटियाला किराना, रामपूर घराना इत्यादि प्रचलित है। इन सब घरानें में दिल्ली, लखनउ, ग्वालियर तथा रामपुर घराने प्राचीन हैं तथा शेष घराने किसी किसी रूप में इन घरानों की ही शाखाएँ हैं।

ग्वालियर घराना :

ग्वालियर घराना सबसे प्राचीन घराना माना गया है। लखनउ दरबार के एक धृपद गायक गुलाम रसूल लखनउ से दिल्ली आकर बस गए थे तथा उन्होंने खयाल गाना आरम्भ कर दिया था। इन्होंने अपने दो भांजे शक्कर खॉ तथा मक्खन खॉ को खयाल गायन की तालीम दी। शक्कर खॉ दवारा अपने पुत्र मुहम्मद खॉ को इस गायकी की शिक्षा दी गयी। बाद में मुहम्मद खॉ ग्वालियर में बस गए थे; वहीं से इस घराने की नीव डली। परन्तु कुछ विदवनों का मत है, कि ग्वालियर में खयाल गायकी का आरम्भ हद्दू— हस्सू खॉ द्वारा किया गया ये दोनों पीर वख्श के पोते थे। कुछ समय पश्चात् ये लोग दौतराव सिधिंया, जो उस समय वहॉ के राजा थे के राज दरबार के राज गायक बन गए। ग्वालियर में यह खयाल गायकी का स्वर्ण—युग था। ग्वालियर घराने में सिर्फ खयाल ही नही बल्कि ध्रुपद, धमार, टप्पा तथा तराना इत्यादि भी उल्लेखनिय रुप में गाये जाते है। ग्वालियर घराने की विशेषता यह है, कि इसमें आकार में आलाप से ही गायन आरम्भ किया जाता है तथा राग का थोड़ा स्वरुप दिखाकर बंदिश आरम्भ कर दि जाती है। ऐसा कहा जाता है, कि इस घराने के कुछ पुराने गायक आलाप नहीं लेते थे, बल्कि बंदिश से ही गायन आरम्भ किया करते थे। बहलावे का अधिक प्रयोग किया जाता था तथा किसी स्वर पर अधिक ठहराव नही होता, स्वरों के विभिन्न टुकडों को लयबद्ध गाता जाता हैं। बोल उपज के बाद छोटी—छोटी बोल तानों का प्रयोग किया जाता है। ग्वालियर घराने में विभिन्न प्रकार की तानों का समावेश रहता है। फिरत की तान लेना तथा गले की तीव्रता से तीनों सप्तकों में घुमाना इस घराने का चलन है, ये तानें बहुत तेज तथा स्पष्ट होती है। इस घराने के गाये जाने वाले कुछ अप्रचलित राग इस प्रकार हैं मालकौंस बहार, सूहा बहार, मालीगौरा बहार, ललित बहार, दरबारी बहार, गौड मल्हार इत्यादि।

अत्तरौली घराना :

यह घराना जयपुर घराना, उनियारा घराना तथा अल्लादियॉ खॉ का घराना भी कहा जाता है। अल्लादिया खॉ भारत के संगीत जगत् पर १६०० ई. से १६४२ ई. तक राज्य करते रहे इनके पूर्वज अतरौली, जिला अलीगढ (उ.प्र) के निवासी थे बाद में यह उनियारा गांव में बस गए थे। जयपुर के नवाब कल्लन खॉ संगीत के प्रेमी थे, उन्होंने इनके पिता को जयपुर राज्याश्रय दिया। कुछ लोग इस घराने के जन्मदाता जयपुर के करामत अली था मुबारक

...उवाली) को मानते हैं। अल्लादिया खॉ वास्तव में ध्रुपद की डागुरबानी के वंशज थे। जयपुर घराने के प्रसिद्ध कलाकार लखनउ घराने के वंशज मुबारक अली का इन पर विशिष्ट प्रभाव था। इस घराने के गायक सर्वप्रथम विलंबित लय में खयाल की पूरी बंदिश प्रस्तुत करते है। खयाल की बंदिश लयकारी में पूर्णतः बंधी होती है। लय तथा बोलों का सुन्दर मिश्रण होता है, एक ही सांस में एक से अधिक आवर्तनों तक आलापचारी, वक्र तानें, लय के बोल बनाव भी इनकी विशेषता है। खयाल गायन में विलम्बित तीनताल अधिक प्रयुक्त किया जाता है। इसमें सपाट तथा लम्बी व छूट की तानों का अभाव रहता है। इस घराने के प्रसिद्ध अप्रचलित राग इस प्रकार हैं, काफी—कानडा, नायकी—कानडा, बिहागडा, त्रिवेणी, पटबिहाग, जैतश्री, पटमंजरी इत्यादि।

आगरा घराना :

यह घराना हाजी सुजान खॉ से (अकबर काल) आरम्भ हुआ। अन्य प्राचीन घरानों की तरह यह भी ध्रुपद तथा धमार गायकों का घराना रहा है। इसीलिए इनके घरानों में नोम तोम की आलाप स्पष्ट रुप से दिखाई देती है। इनकी लयकारी भी ध्रुपद अंग से होती है। सुजान खॉ के पोते घग्गे खुदा बख्श द्वारा इस घराने में खयाल गायकी का पदार्पण हुआ। उन्होंने खयाल गायन की शिक्षा ग्वालियर के नत्थन पीर बख्श से प्राप्त की। इसके बाद इनके दो पुत्र कल्लन खॉ व गुलाम अब्बास खॉ ने गायन में बहुत प्रसिद्धि प्राप्त की। गुलाम अब्बास की पुत्री जयपुर के रंगीले परिवार में ब्याही गयी थी। इनके पुत्र उस्ताद फैयाज खॉ द्वारा आगरा घराना काफी प्रतिष्ठित हुआ। इनके पिता का नाम सफदर हुसैन था। आगरा घराने की विशेषता लयबद्ध बोलताना तथा बंदिश के बोल बनाव हैं। ठाकुर जयदेव सिंह कहते हैं, की आगरा घराने के संस्थापक फैयाज खॉ थे। चीज के बोल बनाव में स्वर पर जमक र गाना, भाव प्रदर्शन के लिए हॉ, हॉ, हेरी इत्यादि शब्दों का प्रयोग भी दिखाई पड़ता है। इनकी गायकी में तानें बिलकुल खड़ी व सरल होती है। विलंबित तीन ताल में गाना भी इस घराने की एक विशेषता है। बोल—बॉट भी इनकी गायकी का एक विशेष अंग है। खयाल गायन में सरगम का प्रचार भी इस घराने द्वारा ही प्रचार में लाया गया है। अपनी निजी विशेषताओं के कारण आगरा घराने ने एक विशिष्ट स्थान भारतीय संगीत जगत् में प्राप्त कर लिया है। इस घराने के सुप्रसिद्ध उस्ताद फैयाज खॉ ध्रुपद, धमार, ठुमरी कव्वाली, खयाल सभी शैलियों का गायन पारंगत थे।

किराना घराना :

किराना घराने के प्रवर्तक एक प्रसिद्ध बीनकर व ध्रुपदिये गुलाम तकी के पोते बन्दे अली खॉ को माना जाता है। गुलाम तकी व उनका परिवार मेरठ जिले के दोताही ग्राम में रहते थे। बाद में किसी कारणवश वह किराना नामक गॉव में आकर बस गए थे, तब से ही इस गायकी का नाम किराना घराना की गायकी पड गया। खयाल गायकी में यह घराना रहमत बख्श, तथा नन्हेखॉ द्वारा प्रारम्भ किया गया। वहीद खॉ तथा अब्दुल करीम खॉ ने इसे संगीत जगत्की बुलन्दियों तक पहुँचा दिया। उन्होने इस घराने के शिष्य भी बढते चले गए। स्वरों का सुरीलापन व चैनदारी इस घराने का विशेषता है। इस घराने के शिष्य भी बढते चले गए। स्वरों का सुरीलापन व चैनदारी इस घराने का विशेषता है। इस घराने की गायकी में स्वर गोल, ठहरे हुए व एक दुसरे के साथ चलने वाले होते हैं। मींड तथा सूत का काम बहुत बारीकी से किया जाता है। इस गायकी में गायक अथवा गायकी एक स्वर को विभिन्न प्रकार से घण्टों तक लगाता रहता है। इस घराने की गायकी भाव तथा रस प्रधान होती है। ताने दानेदार व जोरदार होती है। विलम्बित लय में खयाल आराम से प्रस्तुत किया जाता है। मूलतः बीनकारों का घराना होने के कारण इनकी गायकी में लगाव लोच तथा मींड द्वारा जाते हैं। जिस कारण स्वरों का एक दुसरे से सामंजस्य रहता है। इस घराने का प्रचार व प्रसार महाराष्ट्र में अधिक हुआ है।

348

दिल्ली घराना :

खयाल गायकी का प्राचीन घराना रहा है। दिल्ली के बादशाह मुहम्मद शाह रंगीले अत्याधिक संगीत प्रेमी थे, उनके शासनकाल में ही खयाल गायकी को पूर्णतः प्रचार व प्रसार मिला। इनके दरबार के दो रत्न सदारंग तथा अदारंग (जो महाकवि देव के शिष्य थे) ने सेंकड़ों खयालों की रचना की, ये दोनो कुशल वाग्गेयकार थे। ये दोनों मूर्धन्य कलाकार स्वयं ध्रुपद गाते थे तथा अपने वंशजों को भी इन्होंने ध्रुपद गायन की ही तालीम दी, परन्तु अपने शिष्यों को इन्होनें खयाल गायन की तालीम दी।

दिल्ली घराने ने गायन के साथ वादन में भी काफी नाम कमाया है। इस घराने के सारंगीवादक भी काफी प्रसिद्ध हुए हैं, जिस कारण विलंबित लय प्रधान इस गायकी में सूत तथा मींड का काम बहुत अधिक मात्रा में दिखाई देता है। इस घराने में तानों का स्वरुप बहुतही कठीन होता है तथा उनके नाम भी वैचित्र्य हैं जैसे कुल्फीदार तान, दॉव पेंच की तान, सवाल जवाब की तान, उडान की तान, सुई धागा तान, मछली तान इत्यादि। विलंबित खयाल गाने के लिए प्रायः गायक झूमरा तथा तिलवाडा आदि तालों का प्रयोग करते हैं।

पटियाला घराना :

पटियाला घराना को पंजाब घराना भी कहा जाता है। उस्ताद बडे गुलाम अली खॉ साहब द्वारा यह घराना चर्चा का विषय बना। पंजाब में भी अलग—अलग रियासतें थीं जैसे पटियाला कपूरथला इत्यादि। इन घरानों मे भी ख्याल गायकी खूब फली फुली। इसी घराने को अलैया (जिन्हें अलीबख्श भी कहते हैं) तथा फत्तू (जिन्हें फतेह अली भी कहते हैं) ने चलाया। ये दोनों भाई थे। कुछ लोगों का यह विचार है, कि इन भाईयों के पिता बड़े मियॉ कालू खॉ ने इस घराने की नीव रखी। अलीबख्श तथा फतेह अली की गायकी में दिल्ली, जयपुर तथा अहमद जान ने ग्वालियर जाकर हद्दू खॉ से ग्वालियर घराने की तालीम हासिल की। अली बख्श तथा फतेह अली ने जयपुर गोरखी बाई, बराम खॉ तथा तान रस खॉ से संगीत की शिक्षा प्राप्त की थी। तानरस खॉ (जो दिल्ली घराने के सर्वश्रेष्ठ गायक थे) ग्वालियर जाकर बस गए थे तथा बाद में ग्वालियर के राजगायक बन गए थे। कुछ समय पश्चात् ये वहॉ से हैदराबाद चले गए तथा अंत—तक वहीं रहे तत्पश्चात इस घराने का प्रतिनिधित्व बड़े गुलाम अली खॉ साहेब करते रहे, अपने चाचा काले खॉ से इन्होंने संगीत की शिक्षाप्राप्त की थी। बडे गुलाम अली खॉ के पिता अली द्वारा भी शिक्षा प्राप्त हुई। बड़े गुलाम अली खॉ साहेब के उनके पुत्र मुनव्वर अली खॉ द्वारा भी इस घराने ने प्रतिनिधीत्व प्राप्त किया।

रामपुर घराना :

मुगल साम्राज्य के पतन के पश्चात् अठारहवीं शताब्दी के प्रारम्भ में विद्वानों तथा कलाकारों को दिल्ली का परित्याग कराना पडा, क्योंकि वहॉ वे स्वयं को असुरक्षित अनुभव करने लगे थे। अतः निराश्रय होकर कलाकार वर्ग भारत के विभिन्न क्षेत्रों में जाकर बसने लगे। उत्तर प्रदेश की स्थिती सबसे बिकट थी। यहॉ की कुछ देशी रियासतों के शासक संगीत प्रेमी थे। उनमें रामपूर तथा अवध की रियासते काफी प्रसिद्ध थीं। यहां के नवाबों ने अपना सम्पूर्ण जीवन संगीत के उत्थान के लिए लगा दिया था। इन्ही दोनों रियासतों में दिल्ली दरबार से अधिकाधिक रहा है। इसलिए रामपुर भी दिल्ली के समान कला का केन्द्र बन गया था। रामपुर रियासत की स्थापना सदारंग युग में ही हो चुकी थी। इस कारण रामपुर दरबार के कलाकारों का सम्पर्क दिल्ली दरबार के कलाकारों से होता रहा। रामपुर के उमराव खॉ खण्डारे और सुपुत्र रहमी खॉ तथा अमीर खॉ तानसेन घराने में बहुत प्रसिद्ध कलाकार हुए है। वर्तमान पीढी के अग्रगण्य कलाकारों को शिक्षा का रहस्य रामपुर परम्परा से ही प्राप्त हुआ है। यह तथ्य आचार्य बृहस्पति ने अपने ग्रन्थ संगीत

चिंतामणि के प्रथम खण्ड में पृष्ठ क्र. ३५५ पर लिखी है। यह तथ्य सुविदित है, कि रविशंकर जी और निखिल बनर्जी के सितार और अली अकबर खॉं की विश्वव्यापित झंकार का मूल उत्तर प्रदेश की भूतपूर्व रियासत रामपुर के गुण ग्राहक नरेशों और संगीत गुरुओं की उदारता में है। इन कलाकारों के सम्मान्य गुरु उस्ताद अल्लीउद्दिन खॉं ने वर्षों तक रामपुरीया गुणियों के चरणों में बैठकर संगीत साधना की और रामपुर से उपलब्ध ज्ञान का उदार वितरण अपने योग्य शिष्यों में किया। बहादुर हुसैन खॉं वाजिद अली शाह के परम प्रिय अमीर खॉं बीनकार और ध्रुपद गायक, बाकर अली खॉं (कव्वाल बच्चे, दिल्ली वाले, मौधू खॉं (तबला वादक), कानपूर निवासी अमानी जान (ठुमरी तथा खयाल गायिका, झूमन तथा मम्मी गायिका हैदर खॉं, मुश्ताक हुसैन खॉं, ये सभी रामपुर दरबार के आश्रित रहे हैं। नगमातल हिन्दु — पृष्ठ क्र. ३१ के अनुसार सदारंग की सन्तानों में प्यार खॉं के पौत्र एवं जाफर खॉं के पुत्र सादिक अली खॉं ने ठुमरी को षडज—चलन द्वारा एक उत्तम कला बना दिया। रामपुर के साहजादा हैदर अली खॉं इनके भी शिष्य थे इस प्रकार हम देखते है। इस शैली में स्वर तथा ताल की शिक्षा का विशेष महत्व है। आवाज किस विधि से तैयार कराई जाय, तथा लय व ताल की शिक्षा के साथ—साथ भाषा, भाव तथा साहित्य के ज्ञान की आवश्यकता भी समझी गई।
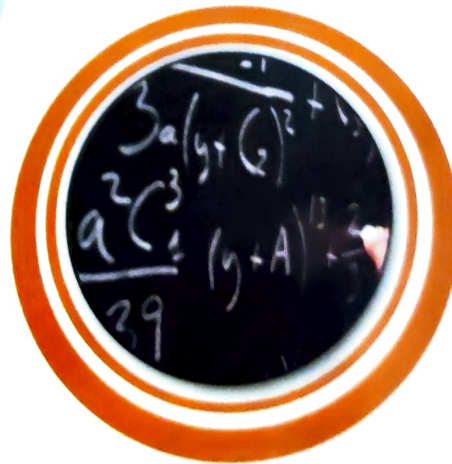
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CONTENTS

constants involved in the infinitesimals. Analysis of the solutions reveals stationary and multi soliton profiles.

Keywords: Invariant solutions, Infinitesimals, Multisolitons, K D equations.

INVARIANTS SOLUTIONS OF ZABOLOTSKY-KHOKHLOV EQUATION

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In this paper, new invariant solutions of Zabolotsky-Khokhlov (ZK) equation have been obtained. A set of two solutions are derived using Lie-group theory. Both the solutions are expressed in explicit form. Lie symmetry generators are used for constructing similarity variables for the given partial differential equation, which lead to the new partial differential equation with one variable less at each step and eventually to ordinary differential equation (ODE). Ultimately, the exact solutions are obtained under some parametric restrictions. The elastic behavior of the soliton solutions is shown graphically by taking appropriate choices of the arbitrary functions involved in the solutions.

Keywords: Lie-group theory, Invariant solutions, Infinitesimals, Solitons, Z K equation.

ROLE OF MATHEMATICS IN INDIAN CLASSICAL MUSIC

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In this paper we focus the relation between mathematic and rhythm in details, which is the basic concept of ancient rhythm. This paper shows the historical face of rhythm which is shown by Bharatmuni. There is great importance of mathematics in the 'Tala' of Indian music. Keeping in view, this paper tried to present and analyze the mathematical analysis about Shruti, Swar, Swar-Sanwad, Swar-Prastar, sarna-Chatustai. We will examine the Talprastar and Bharatmuni's Shruti Swar vibhajan through Sarna Chtushti, which is fully based on mathematics.

(48)

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CONTENTS

Baul - The Devotional Music Transcends the Religion

Shirish V. Kadu

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Abstract: The music of the Bauls, Baul Sangeet, is a particular type of folk song in Bengal. Its lyrics carry influences of the Hindu bhakti movements and the suphi, a form of Sufi song exemplified by the songs of Kabir. Baul religious and philosophical standpoints exist largely as an outcome of the comingling of Hinduism and Islam, containing as well some signs of Buddhist influence. Baul philosophy promotes a liberal view, renouncing caste and other social constructs in an effort to strip oneself of outside influence, revealing the **monermanush**. In this way Bauls focus heavily on the physical as the object of devotion. Their practice focuses heavily on the **chaar-chand**, representing the four fluids of the body and the **naba-dwar**, representing the nine openings of the body. As such, the *monermanush* is given the utmost respect by the Bauls, who feel that **Bhagavan** can only be reached through the human form. In this way, Baul philosophy emphasizes love for all human beings. This, they feel, is the path leading to the Divine Love; Romantic love especially is viewed by Bauls as the link between God and man.

Keywords: Monermanush, Chaar-chand, Naba-dwar, Bhagawan, Sangeet.

Women Rights Violation– An Agent of Violence

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Abstract: Every human being is naturally entitled to human rights. If these naturally bestowed rights of a human being are breached, or taken away completely, it is injustice and abuse and a progenitor of disorder. In India, women are being exploited everyday. Females have been denied humanitarian treatment for ages. They have been addressed to as equals of lower animals, *shudras* or inept gauche slaves. They have been subjected to inhuman conduct and have always been victims of maltreatment and injustice. When injustice is inflicted, it is required that society comes forth in opposition of it and makes provisions for prevention of such incidents from repeating. Be it woman or man, every individual's rights need to be safeguarded and nurtured. This is the prime responsibility of the judicial system, the government as well as the constitution. The right to Liberty, Fraternity, Equality and Justice applies to all and should not be seized from women.

Keywords: Fundamental, Rights, Liberty, Equality, Fraternity, Women, Constitution, Caste, Community, Hindu Code Bill, Buddha, Manusmriti, Ambedkar.

Women Safety in India

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Abstract: Thousands of years ago, Indian women had enjoyed high status. Gargi, Maitreyi, and other women of Vedic lore illustrate the high status Indian women enjoyed in ancient times. The tradition of "Brahmavadinis", women celibates pursuing intellectual studies for life, existed in ancient India. Indian women, who have played a big role in moulding our culture, civilization, arts, religion, have also handled statecraft from the time of Draupadi to Chola Royal women from Rani Padmini, Rani Jhansi and many others, to Indira Gandhi—something which no other society in the world can possibly boast. Indian freedom movement was driven by the symbol of "Mother India" and devotion to her in the song "Vande Mataram". In India, from ancient times, Female Divinity has equated women with power. And, God as confluence of man and woman (Ardhanareeswara) symbolized gender harmony. But unfortunately, contemporary Indian women continue to face discrimination and other social challenges and are often victims of abuse and violent crimes. Manifestations of violence include physical aggression, such as blows of varying intensity, burns, attempted hanging, sexual abuse and rape, psychological violence through insults, humiliation, coercion, blackmail, economic or emotional threats, and control over speech and actions. In extreme, but not unknown cases, death is the result.

Keywords: Women, Safety, India.

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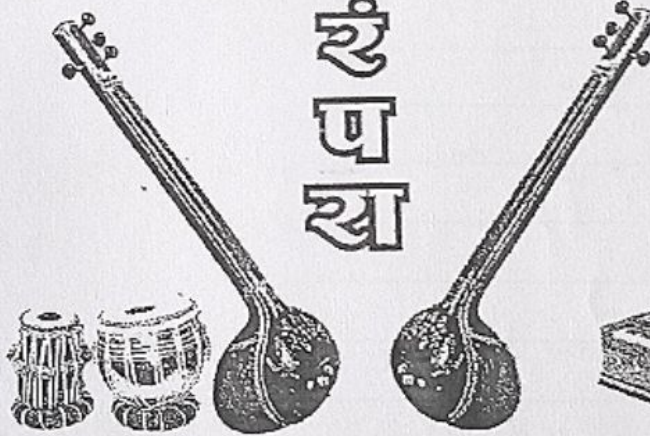## One Day International Conference

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INDEX

87.	Amit Kumar	346
88.	Dr. Shivali Singh Bais	347-351
89.	Prof. Vishal Vijay Korde	351-354

घराना परंपरा मे विवाद

प्रा. विशाल विजय कोरडे
सहा. प्राध्यापक
श्री शिवाजी कला,वाणिज्य
व विज्ञान महांविद्यालय,
अकोला.

सारांश

नृत्य या संगीत मृष्टिमेय पृष्ठपोषकों के कब्जे में नही, या इने-गिने कलाकारों के पंजे में ही नही। अब जन-साधारण के साथ कला का घनिष्ठ संबंध स्थापित हो गया है, बृहत्तर क्षेत्र में कलाओं का प्रसार होने लगा है । अत कलाकारों को यह रक्षणशील मनोवृत्ति छोडनी चाहिए । अब परस्पर समझने, श्रध्दा करने का समय आया हुआ है, की कलाएँ संकुचित दायरे से ऊपर उठ सकेंगी । इसलिए कला-भंडार को पूर्ण करने के लिए विचार विनिमय की आज आवश्यकता है और इस तरह कला के स्तर को उन्नततर करना चाहिए । नृत्य के क्षेत्र में इसकी और भी अधिक आवश्यकता है।

विभीन्न घरानो की उत्पत्ती :

संगीत – जगत् में 'घराना' शब्द अती परिचित है । 'घराना' का अर्थ है, एक विशेष स्थान पर प्रचलित अथवा व्यक्ति व्दारा प्रवर्तित संगीत की रीति या स्टाइल और यही स्टाइल या रीति किसी एक वैशिष्ट्य व्दारा चिह्नित होती है । इसीलिए घरानों का नामकरण किसी 'व्यक्ति' या 'स्थान' के नामकरण के अनुसार होता है ।

संगीत-जगत् में विभिन्न घरानों का विवाद बहुकाल से चला आ रहा है। ऐसा भी कई बार देखा गया है कि वंश-परंपरा से यह विवाद उत्तरोत्तर बढता गया है । संगीत- सभाओं में प्रत्यक्ष रुप से भी इस विवाद का परिणता रुप देखा गया है । यह विवाद अत्यंत अर्थहीन है । कलाकार इसे पैतृक संपत्ति की तरह वंश-परंपरा में पालते आ रहे हैं, इस विवाद का कारण ठीक-ठीक समझे-बूझें बिना ही, इसके कारण परस्पर द्वेष बढता गया है। इससे कला की भी हानि हुई है ।

घराने की उत्पत्ति कैसे हुई, विवाद की सृष्टि कैसे हुई, इसपर विचार करें । आज 'घराना' शब्द से जो अर्थ हम समझते है, उसका प्राचीनत्व एकसौ साल से अधिक नहीं । तो भी प्राचीन काल में घराना न था, यह नही कहा जा सकता। रत, नंदिकेश्वर, कोहल, नारद, मतंग, शाङ्गदेव—ये सभी प्रख्यात संगीत-शास्त्रकार थे और कहा जा सकता है कि इनकी संगीत – कला अपनी विशेषताओं के कारण अलग-अलग घरानों का 'प्रवर्तक' कहा जा सकता है ।

352

भरत और शिष्यवृंद

रत ने सर्वप्रथम 'रससूत्र' का प्रवर्तन किया था । वह इसका प्रवर्तन करने मात्र से शांत हुआ । मगर उत्तर सूरियों ने विभिन्न पहलुओं से, विभिन्न ढंग से विचार कर उसपर प्रकाश डाला । रत के 'रससूत्र' पर ही मातृगुप्त, उद्‌ट, लोल्लट, शंकुकट्टनायक, हर्ष, कीर्तिधर, अभिनवगुप्त आदि अनेकां ने विवेचना प्रस्तुत की । अभिनवगुप्त 'रससूत्र'–व्याख्या की चरम परिणति पर पहुँचा ।

'नाट्यशास्त्र' में बताया गया है कि रत ने अपने एकसौ शिष्यों को नाट्यशिक्षा दी थी । इनमें कोहल रत का पुत्रस्थानीय शिष्य था, यों रत के उत्तराधिकारियों ने एक रीति या वैशिष्ट्य के व्दारा एक स्कूल की सृष्टि की थी । नंदिकेश्वर ने भी एक स्कूल की सृष्टि की थी । दोनों ने दो विषय रीतियों का प्रवर्तन किया था । 'सभी कलाओं का रस संवलित होना जरुरी है,' यह बात आचार्य रत ने बार–बार कही थी । दूसरी तरफ नंदिकेश्वर ने नाट्य के आंगिकों का विशेष गुरुत्व दिया था । परवर्ती अनेक संगीत – शास्त्रकारों ने आचार्य रत और नंदिकेश्वर की दोनों धाराओं का अनुसरण किया था । इसमें किसी तरह का विरोध किसी ने प्रकट नही किया था । इस प्रसंग में शाड्‌गदेव का ना उल्लेखनीय है । शाड्‌गदेव ने 'नाट्यशास्त्र' और अभिनयदर्पण', दोनों का अनुसरण किया था । प्रत्येक ने अपने – अपने मतामत व्यक्त किए थे । मगर इसके कारण कोई विवाद नहीं उठा । सबने रत को 'नाट्य–गुरु' के रुप में स्वीकार किया था और वे परस्पर एक–दूसरे की श्रद्धा करते थे । अत कहा जा सकता है कि यह घराना – प्रथा प्राचीन काल से ही प्रचलित थी, किंतु वह इतने संकीर्ण क्षेत्र में व्यवहत नहीं होती थी ।

अंधकार युग

व्यापक अर्थ में व्यवहत होने के कारण ही प्रवाहरहित दूषित जलाशय के समान कला की गति का रोध की न हुआ था, वरन् स्वच्छ जलधारा की तरह वह आगे बढी । इसी कारण से मध्य युग की संगीत – कला का साथ प्राचीन युग की संगीत – कला का संपर्क – सूत्र होने पर भी बडी मात्रा में उसके रुप का परिवर्तन हो गया था । अवश्य मध्य युग के अंतिम पाद में संगीत की अवनति होने लगी थी । इसलिए इस कालांश को संगीत का 'अंधकार युग' कहा जा सकता है ।

विवाद का प्रारंभ –

राजा–महाराजा लोग प्रतिभावान् गुणी संगीतज्ञों को वेतन देकर अपने–अपने दरबार में नियुक्त कर स भीको अलंकृत करने लगे थे । ये अक्सर विभिन्न राज्यों के गुणज्ञ कलाकारों को आमंत्रित कर प्रतियोगिता की व्यवस्था करते थे । कलाकारों की पराजय अपनी पराजय मानी जाती थी । इसलिए कलाकार अपने राज्यों का पूर्ण समर्थन प्राप्त करते थे और कृतज्ञतास्वरुप अक्सर वे कलाकारोचित मनो व छोडकर विवाद का रास्ता ग्रहण करने पर मजबूर होते थे । प्राचीन इतिहास मे मानव युग – युग से अपने को बचाए रखने के लिए नाना आयोजन करते आ रहे है ।

उनमें एक कला है । प्रधान आयोजन है वंश—सृष्टि ।कलाओं में भी इस वंश—सृष्टि की प्रचेष्टा होती थी । प्रत्येक कलाकार अपनी कला की महाकाल के हाथ से रक्षा करना चाहता है । अतः अपनी रचना को वह अपनी शिष्य —परंपरा में प्रतिफलित कर अमर करना चाहता है। संगीत और नृत्य के कलाकार मृत्यु के साथ महाकाल के क्रोड में चिरविश्राम करते है।उस समय के संगीत — नृत्यकारों ने अपनी रचना को शिष्य परंपराओं के बीच बचाए रखना चाहा था । इसके लिए कठोर साधना चली । इस साधना के व्दारा ही.नृत्य और संगीत को अनन्य कर दिया गया . कला — गुरु दीक्षा व्दारा, साधना व्दारा, अपनी सृष्टि और भावधारा को शिष्यों की शिरा — उपशिराओं में संचारित करते थे, इससे शिष्यों में विशेष रीति या 'स्टाइल' पैदा हुई, जिसे 'घराना' कहकर पुकारा जाने लगा ।

'घराना' — विवाद की सृष्टि यहीं से हुई । अपने घराने को सर्वश्रेष्ठ स्थावित करने के लिए वे अक्सर अपर पक्ष के साथ विवाद में फँस जाते थे । इसके कारण उत्पन्न विवाद आज भी थम नहीं गया है ।

धर्म का प्रभाव —

धर्म ने कभी प्रसन्न भाव से, तो कभी सक्रिय रुप से विवाद का ईंधन जुटाया है । जो वैष्णव होते थे, अपनी कलाओं में राधा—कृष्ण की प्रेम — लीलाओं को व्यक्त करते थे । शाक्त अपनी कलाओं के माध्यम से शक्ति की उपासना करते थे । इस्लाम — धर्मावलंबी अपनी रचनाओं में अल्लाह को पाते थे । अक्सर सांप्रदायिक विद्वेष के कारण एक संप्रदाय का कलाकार अन्य संप्रदाय के कलाकार को सहन नहीं कर पाता था । इससे विवाद उठ खडा होता था । उसका प्रभाव कलाओं पर पडता था । इससे कला गौण और धर्म—प्रधान हो गई थी ।

घराना — विवाद — प्रसंग में यहाँ कथक नृत्य के दो घरानों का उल्लेख किया हा सकता है । ये है —लखनऊ और जयपुर — घराना । एक तीसरें घराने का भी उल्लेख पाया जाता है — बनारसी घराना । इन घरानों में विवाद चलता ही रहता । तीनों घरानों की तीन तरह की विशिष्ठता है । तीनों में प्रतिभासंपन्न कलाकारों का अवि र्ब हुआ है । लखनऊ — घराना भाव या अभिनय — प्रधान है, जयपुर — घराना ताल — प्रधान एवं बनारस — घराना आंगिक प्रधान है ।

अब इस तरह के विवाद में कोई अर्थ ही नही रह गया है । कारण अब राजा भी नही वे राज्य भी नही, वह युग भी हमेशा के लिए विदा हो गया ।

संदर्भ ग्रंथ सूची

1 संगीत घरानो का विवाद — मंजुलिका राय चौधरी

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मराठी भाग – ५

AJANTA PRAKASHAN

मराठी अनुक्रमाणिका भाग - ५

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राज्यशास्त्र विभाग प्रमूख, श्री. शिवाजी महाविद्यालय, अकोला.

प्रस्तावना

भारतीय संसदेत (राज्यसभा वगळून) लोकसभा व राज्यांच्या विधानसभामध्ये महिलांना आरक्षण देण्यासंबंधीचे विधेयक राज्यसभेतून २/३ बहुमताने पारित होवून लोकसभेत पुरूषप्रधान भारतीय राजकिय पक्ष पध्दतीच्या वर्चस्वामुळे बहुमताअभावी सत्ताधारी व विरोधी पक्षांच्या मतभेदामुळे वादग्रस्त ठरले आहे. गेल्या १४ वर्षांत प्रथमच महिला विधेयक संसदेत प्रस्तुत केले गेले होते. या पूर्वी लोकसभेत महिलांना आरक्षण देण्यासंबंधीचे विधेयक संसदेत येण्यापूर्वी तीन वेळा रोखल्या गेले होते. १९९६ साली पंतप्रधान देवेगौडा यांच्या कार्किर्दीत, दुसऱ्या वेळेस १९९७ साली गुजराल पंतप्रधान असताना आणि १९९८ मध्ये अटल बिहारी वाजपेयी पंतप्रधान असताना हे विधेयक संसदेत मांडण्याचा प्रयत्न झाला. पण १९९६ साली गीता मुखर्जी समीतीकडे या विधेयकाचे काम सोपवले या समितीने लोकसभेत महिला आरक्षणाची शिफारस केली होती. नोव्हेंबर १९९८ मध्ये संसदेत मांडलेल्या महिला विधेयकामध्ये महिलांना ३३% लोकसभेत आरक्षण देण्याची तरतुद करण्यात आली होती.

प्रस्तुत शोधनिबंधाची उद्दिष्टये

१) भारतीय राजकारणातील स्त्रीयांच्या सहभागाचे चित्र समाजासमोर मांडणे.

२) राजकिय दृष्टीकोनातून स्त्री-पुरूष समानता हे तत्व समाजास पटवून सांगणे.

३) स्त्रीयांचा राजकारणातील सहभागासोबत कृतीयुक्त सहभाग वाढीस लावणे.

४) शासन व्यवस्थेतील स्त्रीयांसाठी राखीव ठेवण्यात आलेल्या जागांची त्यांना माहिती करून देणे.

५) राजकारण आणि राजकिय पक्षांचे शुध्दीकरण घडवून आणणे.

६) महिलांची संख्या वाढविण्यासाठी महिला आघाडया सशक्त व्हाव्या.

७) महिलांमध्ये राजकिय आरक्षणातून निर्णयक्षमता, स्वकतृत्वाची जाणीव निर्माण करणे.

भारतीय महिलांचे आजपर्यंतचे लोकसभेतील सहभाग

सध्याच्या १६ व्या लोकसभेत एकुण ५४५ लोकप्रतिनिधींमध्ये ६६ महिला लोकप्रतिनिधी असून, त्यातील २६ महिला लोकप्रतिनिधी कोणकोणत्या राजघराण्याची संबंधित आहेत. जर लोकसभेने ३३% महिला आरक्षणाचे विधेयक पारित केले तर १८९ महिलांना खासदार होण्याची संधी मिळेल ; पण त्यामुळे ११५ पुरूष खासदारांची संख्या कमी होईल या भितीने पुरूषांचे वर्चस्व असलेल्या लोकसभेत राजकीय पक्ष व खासदार प्रस्ताविक विधेयकावर जे उपाय सुचवत आहेत ते हास्यास्पद असून, स्वतःच्या मतदारसंघाची आहुती देण्यासाठी व स्वतःचे राजकिय अस्तित्वधोक्यात जाण्याची संभाव्यता समोर दिसत असल्याने महिला विधेयक लोकसभेत हासुन पाडण्यासाठी पुरूष खासदार व राजकिय पक्ष पुढे सरसावले आहेत. २००९ च्या १५ व्या लोकसभेच्या सार्वत्रिक निवडणुकींमध्ये ८०७० उमेदवारा पैकी केवळ ५५६ महिला उमेदवार उभ्या होत्या त्यांचे ६.९% एवढे नाममात्र प्रमाण होते. हे महिलांचे प्रमाण शेजारच्या पाकिस्तान, बांग्लादेश, नेपाळ, अफगानिस्तान याच्या तुलनेत नगण्य होते.

महाराष्ट्र, बिहार, मध्यप्रदेश, छत्तीसगढ, उत्तराखंड, हिमाचल प्रदेश, केरळ, या राज्यानी महिलासाठी स्थानिक स्वराज्य संस्थेत ५०% आरक्षण दिले आहे. त्यामुळे स्थानिक स्वराज्य संस्थातील महिलांचा सहभाग वाढला पण बहुतांशी महिला अशिक्षित आणि पुरूषांच्या छत्र छायेच्या प्रभावातुन मुक्त झालेल्या नाहित त्यामुळे असं निश्चितपणे म्हणता येईल की महिला आरक्षणाने महिला सबलीकरणाचा प्रश्न सुटणार नसुन पुरूष वर्चस्वाच्या मानसिकतेत बदल होणे आवश्यक आहे.

भारतीय महिला: काल, आज आणि उद्या

लोकसभा	एकूण सदस्य	महिलांची संख्या	टक्केवारी
पहिली	४९८	२३	४.६२
दुसरी	४९४	३७	७.४९
चौथी	५२०	२४	४.६१
पाचवी	५२०	३२	६.१४
सातवी	५४२	२६	४.७८
आठवी	५४२	४६०	८.४६
नववी	५३९	३२	६.२९
दहावी	५३१	३९	७.३४
अकरावी	५४३	४०	७.४५
बारावी	५४३	४४	८.१०
तेरावी	५४३	४६	८.४७
चौदावी	५४३	४५	८.२९
पंदरावी	५४३	५९	१०.८७
सोळावी	५४३	६६	१२.१५

महिलांचे सदयास्थितीतील राज्यसभेतील सहभाग

लोकसभेप्रमाणेच राज्यसभा या सभागृहातील महिलांचा सहभागही कमीच दिसुन येतो त्याची आकडेवारी खालील प्रमाणे आहे.

वर्ष	प्रमाण
१९५२	७.३
१९५७	७.५
१९६२	७.६
१९६७	८.३
१९७१	७.०
१९७७	१०.२
१९८०	९.८
१९८४	११.४
१९८९	९.७
१९९१	१५.५
१९९६	९.०
१९९८	१०.०
१९९९	१०.०
२००४	११.०
२०११	११.९

वरील तक्त्यावरून राज्यसभेतील महिलांची संख्या पहीली असता तिचे प्रमाण ही फार कमी सरासरी आहे. घटकराज्याच्या विशी मंडळातील महिला प्रतिनिधींची संख्या ही फार कमीच आहे. बहुतांश वेळा पक्षाकडुनही महिला उमेदवारांना तिकिट देण्याचा विचार केला जात नाही. त्यामुळे महिलांचा राजकारणातील सहभाग कमी दिसुन येतो. परंतु स्थानिक स्वराज्य संस्थेतील महिला प्रतिनिधींची संख्या चांगली आहे. जवळपास १० लाख महिला स्थानिक स्वराज्य संस्थेत कार्यरत आहेत. कारण येथे महिलांना ३३% आरक्षण आहे. तेव्हा लोकसभा, राज्यसभा व विधानसभेतील महिला प्रतिनिधींची संख्या वाढविण्यासाठी महिला आरक्षण बिल मंजुर झाले पाहिजे. कारण प्रगत समजलजल्या जाणाज्या महाराष्ट्रात महिला आमदारांची संख्या ११ आहे. तसेच या महिलांना त्यांचे वडील किंवा पती राजकारणात असल्यामुळे आमदारकी प्राप्त करता आली आहे हे नाकारता येत नाही.

महिलांचा राजकारणातील सहभाग वाढविण्यासाठी उपाय

१) लोकसभा व राज्यसभेतील महिलांचा सहभाग वाढविण्यासाठी महिला आरक्षण बिल संमत झाले पाहिजे.

२) महिलांना आर्थिक दृष्टया स्वावलंबी होण्यासाठी प्रोत्साहित केले पाहिजे.

३) महिलांना उच्च शिक्षणासाठी प्रोत्साहित करण्यासाठी उच्च शिक्षणासाठी शिष्यवृत्तींची व्यवस्था करावी.

४) महिलांना संघटीत करून त्याच्या स्वातंत्र्याबद्दल व हक्काबद्दल जागरूक करावे यासाठी जिल्हा स्तरावर शिबीराचे आयोजन करावं.

५) राजकीय पक्षाव्दारे समताधिष्ठित समाज निर्मितीसाठी स्त्री-पुरूष दोघांचेही प्रबोधन करणे आवश्यक आहे.

६) स्त्री संघटनांनी राजकारणापासुन अलिप्त न राहता राजकारणात येण्यासाठी तसेच निवडुन येवू इच्छिणाज्या स्त्रीयांमध्ये जागृती निर्माण केली पाहिजे.

प्रस्तूत संशोधनाचे निष्कर्ष

१) महिलांचे राजकारणा विषयी असणारे उदासिन दृष्टीकोनात काही प्रमाणात फार जाणवतो.

२) पूर्वीची आणि आताची स्त्रीयांची राजकारणातील बदलत्या स्थीतींविषयी समाजाची भूमीका लक्षात येते.

३) स्त्री-पुरूष या भेदांविषयी राजकिय दृष्टीकोनातून समानतेची बिजे रोवली जात आहे.

४) राजकारणातील स्त्रीयांना मिळालेल्या आरक्षणाविषयी समाजातील लोकांचे दृष्टीकोन पूर्वीपेक्षा बदलल्याचे जाणवते.

५) स्त्रीयांमध्ये राजकिय आरक्षणातून निर्णयक्षमता व कर्तव्यदक्षता वाढीस लागली आहे.

६) राजकिय सहभागामुळे स्त्रीयांना समाजात मान-सन्मान प्राप्त होवून त्याच्यात एक आत्मविश्वास निर्माण झाला आहे.

संदर्भ

१) डॉ. भोळे भास्कर लक्ष्मण, जून २००८, भारताचे शासन आणि राजकारण.

२) जाधव तुकाराम, जानेवारी २०११, भारतीय राज्यघटना व घटनात्मक प्रक्रिया

३) पवार प्रकाश सप्टे २०११, समकालीन राजकीय चळवळी.

४) लांडगे पी.एस. ऑक्टो २०११, भारतीय राजकारणाचे बदलते स्वरूप व उपाय.

५) इंटरनेट www.loksabha.com