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B.Ed. I Year

TERM-I

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Pedagogy of Mathematics - Part 1

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PART-A

1.) **Contributions of Ramanujam:-**

* Ramanujam was India's greatest Mathematics genius. He was born on 22nd ~~Jult~~ December 1886-1920.

* He ~~born~~ was at grandmother's house at Erode. ~~He~~ who was one year old came ~~the~~ he to Kumbakonam ~~at~~ which is at 400 km ~~at~~ from Madras.

* He try to study the primary Schools and attend the many Councils, but he did not catch the this Schools.

* And, five years old he got the Town High School at Kumbakonam and Studied.

* Interested in the all Subjected and Knowledged person. He Studied well

at the childhood periods also.

* Ramanujam 's father work at the cloth 's Merchant Shop.

* He was married at ten years old girl, S. Janagi Ammal. But, they not live and at present age is 12 year old.

* He published book at Gr. S Carr and Elementary resulting in pure Mathematics.

* He know the everythink in Mathematics and solve it from the difficult problems at childhood age.

* He was very interested in the higher geometry theorm.

* Composite number is structured and distribution of its.

* Investigation of divergent series.

* It is every even integer is greater than the two sum of primers.

* It is geometric series, definite series.

* $1729 = 1^3 + 12^3$

$1729 = 9^3 + 10^3$

* Whole number is represented by the natural number $P(N)$ but is sum at the any number is different way of addition is there from its series.

$P(5) = 7$

ie) $1+4=5$

$3+2=5$

$3+2=5$

$1+1+1+1+1=5$

$4+1=5$ ....

* It represented by $P(5) = 7$

$P(200) = 3,972,999,029,388$

* He know the lot of ways to calculated the mathematics solving problems is their from the Ramanujam's series of the geometric distrubition of the mathematics.

2) Analytic and Synthetic Method:-

Analytic Method

* Analytic Method is "analysis" of means is "breaking up" and together to the analytic Method.

* Separated to the different ways and together to analysis the institution of consitutent Method.

* It leads to conclusion to hypothesis.

* It leads to unknown to known

* It leads to abstract to concrete.

For examples:-

$$2\log(a+b) = 2\log 3 + \log a + \log b$$

Sol:-

To unknown to known.

$2\log 3 + \log a + \log b$ is true.

$2\log(a+b) = 2\log 3 + \log a + \log b$ is true

$\log(a+b)^2 = \log 3^2 + \log a + \log b$ is true

$\log(a+b)^2 = \log 9 + \log a + \log b$ is true

$\log(a+b)^2 = \log 9 + \log ab$ is true

$\log(a+b)^2 = \log 9ab$ is true

$(a+b)^2 = 9ab$

$a^2+b^2+2ab = 9ab$

$a^2+b^2 = 9ab - 2ab$

$a^2+b^2 = 5ab.$

Merits :-

* It is power of thinking and reasoning.
* It is clearly understanding to the Students.
* It is psychological method.
* Students are encouraging ourself and interesting to attent this type of questions.
* Easy to Solve it the problems.
* Self learning is increased.
* Maximum Students are participate this analytic method.

Demerits :-

* It is lengthity method.
* It 's go to the step by step.
* Don't skip the steps.

Synthetic method :-

* Synthetic method is based on the "Synthesis" means combined the elements.
* Separated the synthesis and combined the problems are solving to it.
* It leads to hypothesis to conclusion.
* It leads to known to unknown.
* It leads to concrete to abstract.

For examples :-

$$2 \log(a+b) = 2 \log 3 + \log a + \log b$$

Sol :-

known to unknown process.

$$2 \log (a+b) = 2 \log 3 + \log a + \log b$$

is true.

$2\log(a+b) = 2\log 3 + \log a + \log b$

$\log(a+b)^2 = \log a + \log b$

$\log a + \log b = \log a + \log b$

Adding ab on both sides

$\log a + \log b + ab = ab$

$\log(ab) = ab$

$\log ab = ab$

Merits:-

* It is a short Method
* It is ~~unpsy~~ unpsychological Method
* It is discovery model.
* It is understanding the easy way.

Demerits:-

* It is heuristic method
* Teacher's are also difficult to learn it.
* Students's not participates to attend the classes and solve it.

Part-B

1) Characteristics of Mathematics:-

* Characteristics of Mathematics is classified into the five types.

* logical sequence
* Structured of Mathematics
* Precision
* Abstractness
* Symbolism.

logical sequence:-

* A Mathematical of characterised the namely logical sequence.

* It is postelust the step by step, evaluated at the sequences.

* Algebra depends on arithmetic, algebra depends on Calculus, dynamic depends on algebra, geometric depends on Calculus and geometric depends on and so on.

Structure of Mathematics:-

* Structure of Mathematics is formation, arrangement, evaluation of the Mathematics.

* To arrange the step by step at the problem solving in the Mathematics.

* To formation of the problem is same to difficult one also.

* It's again the formation, arrangement and evaluation.

Precision:-

* Precision means the "exact" value of the sums and problems.

* It denotes the right or wrong to show the accurate one of the precision.

* Then, accept or Reject to tell the correct value to show the finall answer of the problems.

* To say the accurate answer from Right or wrong and Accept or reject.

Abstractness :-

* Abstractness means don't touch the any values or symbols like a way of physics.

* Do the experiment in physics it is a abstractness.

* Likewise the Mathematics of abstractness is also same.

Symbolism :-

* The language communicated to the symbols.

* It is number and numerator of the symbolis.

* Number means 1, 2, 3, 4 . . . . .

Numerator means x, y, z . . .
a, b, c . . .

* To communicated with the symbols.

5.) 5E Models :-

* 5E Models approach is divided into the five Models.

* Engage
* Explore
* Explain
* Elaborate
* Evaluate

Engage :-

* Engage the Students to improve the our Quality of education and precision to it. Students are always engaged to the formation of the accuracy of the engaged one.

For example :-

* To Measure the Straws length and tell to the teacher and Students are Measure the Straw without Scale.

* Teacher told the Students to take the Colour paper, Craft paper, graph paper and Measure and tell to the teacher.

Explore:-

* Explore the certain problems and Students are told the value of the point.

For example:-

* It's graph have the points and names are also there from the graph paper (or) Colour paper.

* Points are A(3,4) B(4,5) (or) C(9,8) D(10,7)

* Another point is E(7,8) F(8,9) (or) G(9,1) H(2,3).

Explain:-

* Points are ploted at the graph paper and draw the draw from the graph papers.

* Students are understanding to the some problems and explain to the other Students and assess to the Students also.

For example:-

* Plot the points and draw the graph.
* parallel to x-axis.
* parallel to y-axis.

Elaborate:-

* Elaborately to tell the what we understand in the problem and tell it to the Students.
* Students are also ask the Question and tell it answer to clarify the doubt to Students.

Evaluation:-

* Finally evaluate the Student and assess it from the final Stage of the Students.

42

* We do the evaluate the asking Question, conducting test to the Students and continuity is there from the evaluation process.

9.) Bloom's Taxonomy in Education objectives:-

* Bloom's Taxonomy in education objectives means thinking, attitude and physical.

* It's classified into three domains. It is the cognitive, Affective, psychomotor.

Cognitive domain:-

* Cognitive domain is thinking power is developing in this domain.

* To the keen observation and through of it.

→ knowledge

→ Comphension

→ Application

→ Analysis

→ Synthesis

→ evaluation.

Affective domain:-

* Affective is develops to the emotion and attitude

* It increase the co-operation and tolerance.

* Someone asking question for you, you should tell the good manner of the answer.

→ Receiving
→ Responding
→ Valuing
→ Organisation
→ Characterisation.

Psychomotor Domain:-

* Psychomotor domain is physical and recall the information of the domain.

* It is the movement, shaping these are the psychomotor domain.

→ Imitation

→ Manipulation

→ Precision

→ Articulation

→ Naturalisation

10.) Problem Solving Method :-

* Problem Solving Method means step by step, skip the method are not proceeded at this method.

* To teach the any question or problems, to tell the step by step, don't skip the points and steps.

* In problem solving method is increasing our self learning, confidence to attend the problems.

* It is set of induction and means of the question and clarify the doubts.

* It's having the union method and intersection is also indicated to this method.

* Union of the set is combine together.

* Intersection of the set is take the common number from the set.

* $\{4,3,5,6\} \cup \{4,5,7\}$

$\{3,4,5,6,7\}$

* $\{4,5,7,8,9\} \cap \{8,7,9,3,7\}$

$\{7,3,7,9\}$

3

* It's a problem solving method of the union and intersection one.

* It carry from the empty set and some numbers are there from the problem solving method.

12.) aim and objective of learning Mathematics :-

* Aims of learning Mathematics is increasing the power of thinking and ability to attain from it.

* Leaning Mathematics including the all kind of Material and objectives of the this Method.

* It 's objective of learning Mathematics to evaluate the Students capacity and solve it from objective of learning Mathematics.

* It is easily understanding and learning is improving the aims and objectives.

* To search the new numbers and symbols are there from the some kind of book and authors of the learning Mathematics.

* To improving the knowledge of the Mathematics and Text books.

* Learning Mathematics difficult to learn it from the books and other Sources also.

* Number and numerators are their, Vertical and Horizontal, parallel are all these in the learning and teaching Mathematics.

3) Aim of teaching Mathematics:-

* Teaching Mathematics is very difficult to candil the Students from Schools.

* Students are intelligent and brilliant from the Mathematics and Solve it the different type of problems.

* To teach the Mathematics at very slowly and explain it step by step

Students are physically present and Mentally absent in the classroom.

* Keep it mind and take the class from the Students and encouraging to it from the sums and problems.

* 10% Students only understand the problems and other Students are can't understand the problems.

* They are playing at the classroom and distrube the other Students also.

* To watch it keen and observe the the Students and to tell the problem and sums.

* To tell the problems at the teaching aids, kraft work, colour paper and explain the problems Students are understanding the problems at very clearly.

Part-c

1.) **Need Methods and Strategies for teaching Mathematics:-**

* Mathematics can apply the new Solution for new Situation/problems.
* It is clarly understanding to the Students.
* Mathematics is the natural way of the Strategies.
* It is More knowledgable and teaching for the Mathematics of the need and significant of its.

3.) **Teaching of Mathematics help the learners in their day-to-day life:-**

* It is usage of the day-to-day life
* For example, going to Shop and we are using the Maths from that Shop.
* Measure the table or anythink in home and also used the Mathematics.

* In all places Maths should useful to the everywhere in the day-to-day life.

6) Cognitive domain :-

* Knowledge – Recall information
* Comprehension – Understanding Information
* Application – Apply the particular way.
* Analysis – To analysis the problems
* Synthesis – To combine the synthesis.
* Evaluation – Evaluate | assess the Students.

10.) Advantages of Programmed Instruction :-

* Programmed Instruction means to involve the Instruction and teaching Mathematics is advantage.

* Programmed instruction is learning and teaching is increasing of the advantages to the Students.

* Apply the application of the programmed instruction.

8) Merits of Heuristic Method :-

* Heuristic Method is convey the points at the different ways.

* Clearly understanding to the pupils.

* It is learning method of the learning Mathematics.

* Heuristic Method is useful to the day-to-day heuristic on the learning Mathematics.

2.) Model of teaching :-

* Model of teaching is distribed the objectives and aims,

* Crafted work

* Colour paper

* Graph sheet

* teaching aids

* Charts

5) Teaching Mathematics at Secondary level :-

* Secondary level Students are advanced level of the Mathematics and all Subjects.

* Some Students are Only Dull Students in the School.

* Otherwise all the Students are intelligent and brilliant of the Mathematics.

* To teach it very clearly and to reach the Students from the problem or information.

Part - B

11) Bruner's Concept attainment Model :-

* Bruner's concept attainment Model is training teacher's or Students Should them in the attainment Model.

* Training teacher's are did n't take the class at the good way of teaching at the attainment model.

* Should be provided the experienced staff to teach the mathematics and students are also understanding it.

* It should provided the training staff the teaching aids,

Models

Different Models

Chart work

* It's useful for the training and students are listen to the class and tell the answer about the question.

2 * Students are always active to the Maths class and staff take class at good way students and listen.

* It is increasing the knowledge and reasoning power is increasing to the students.