QUESTIONS BANK FOR FIRST SEMESTER

Numerical analysis

Q1) Create the Equation for the reciprocal for square roots of numbers by (N.R.M)

Q2) Derive formula to the Remainder of Taylor Series

Q3) If by Maclaurin expansion prove that

Q4) Derive Secant Method

Q5) Find the first root for the following equations by N-R system Method

 If

Q6) Create the Equation for the reciprocal of numbers by (N.R.M)

Q7) Derive Taylor Series

Q8) If by Maclaurin expansion prove that

Q10) Find the first root for the following equations by N-R system Method

 If

Q11):A) Define error theorem and explain all types of error

B)Write this polynomial ( 𝒙𝟔  = −𝟒 ) in powers ( 𝒙 − 𝟏)

Q12: Find the value for the following Numbers by (N.R. M) :

 , ,

Q13: A) Write this polynomial ( ) in powers ( )

 B) Define Errors theorem and compare between Absolute Error with

 The Relative True Error

 Q14: Find the first Iteration for following statements by N-R system Method

Q15: If then find: a) b) c) Third Iteration

Q16: Find Maclaurian series for

Q17: Create the Equation for the square roots of numbers by (N.R.M)

Q18: Find the first Iteration for following statements by N-R system Method

Q19: If then find: a) b) c) Third Iteration

Q20: A) Write this polynomial ( ) in powers ( )

 B) Define Errors theorem and compare between Truncation errors

 with Round-off errors

Q21) Derive N.R.M formula

Q22) Find the first roots for the following equations by N-R system Method

 , if

Q23) Create the Equation for the reciprocal of numbers by (N.R.M)

Q24: Find the first Iteration for following statements by N-R system Method

Q25: If then find: a) b) c) Third Iteration

Q26: Find Maclaurian series for

Q27: Create the Equation for the of numbers by (N.R.M)

Q28: Find the first Iteration for following statements by N-R system Method

Q29: If then find: a) b) c) Third Iteration

Q30: A) Write this polynomial ( ) in powers ( )

 B) Define Errors theorem and compare between absolute error

 with relative absolute error

Q31) Derive the equation to find

Q32) Find the first roots for the following equations by N-R system Method find the first itration

 , if

Q33) Create the Equation for the reciprocal of numbers by (N.R.M)

Find the value for the following Numbers by (N.R. M) :

 , ,

 Find the value for the following Numbers by (N.R. M) :

 , ,

 if we mix two mathematical methods we can derive the equation for one method by NRM

**QUESTIONS BANK FOR SECOND SEMESTER**

 Numerical analysis with R

Q1)

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Q2)

Q3)

Q4)

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Q7)

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Q6)

Q8)

Q10)

Q11)

Q12)

Q13 )

Q14)

Q15)

Q16)

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Q17)

Q18)

Q19)

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Q20)

Q21)

Q22)

Q23)

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Q24)

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***2)*** (𝒙)=𝒔𝒊𝒏𝒙

*a) Find Taylor series around the point* 𝑎=𝜋4

*b)Use five term of this series to estimate* 𝑠𝑖𝑛𝜋6

*c) Find remainder of Taylor series*

*d) Find Maclaurianseries and General Formula(G.F)*

Q Write the General table for Forward Differences (F.W.D.)

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