Code No: 56036   **Set No. 1**

<div align="center">

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
III B.Tech. II Sem., II Mid-Term Examinations, April – 2014
CHEMICAL ENGINEERING MATHEMATICS
Objective Exam

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Name: _____ **Hall Ticket No.** ⬜⬜⬜⬜⬜⬜ A ⬜⬜⬜⬜

<div align="center">

Answer All Questions. All Questions Carry Equal Marks.Time: 20 Min. Marks: 10.

</div>

I   **Choose the correct alternative:**

1.   The realation between the Operators E and ∇ [   ]
   A. $E = 1 - \nabla$ B. $E = \nabla$ C. $E = 1 + \nabla$ D. $\nabla 1 - E^{-1}$

2. $\Delta \nabla =$ [   ]
   A. $\Delta - \nabla$ B. $\Delta + \nabla$ C. Δ / ∇ D. ∇ / Δ

3.   Relation between E, y_1 and y_0 is   [   ]
   A. $Ey_1 = y_0$ B. $E^2 y_1 = y_0$ C $Ey_0 = y_1$ D. $E^2 y_0 = y_1$

4.   Order of a finite difference equation is determined by the ----- of the highest
   difference   [   ]
   A. Order   B. degree   C. Both   D. None

5.   The relation between D and E   [   ]
   A. $E = e^{hD}$ B. $E = Hd$ C. $E = e^{h/D}$ D. $E = h/D$

6.   The order of $y_n + 2y_{n-2} = 0$ is --------------   [   ]
   A. 1   B. 2   C. -2   D. n

7.   Graphical method will work for all ---- order equations provided they can be separated into a
   simple form.   [   ]
   A. Third   B. Second   C. First   D. Zero

8.   The parameter that gives a good measure of the deviations of the *x*'s around their mean
   is ---   [   ]
   A. SD   B. Variance   C. both   D. None

9.   If the no of factors are 2 then no of treatment combinations are ---   [   ]
   A. 4   B. 2   C. 3   D. 1

10.   If the no of factors are 3 then no of treatment combinations are ---   [   ]
    A. 4   B.6   C. 3   D. 8

II   Fill in the blanks

11.   The Particular Integral of $(E+5) y_n = 3\rho^n$ is ------------------

12.   Kremser Brown Equation is given by -----------------------

13.   If 10,000lb/hr of pure liquid A of density 60lb/ft^3 is entering into a reactor of volume V ft^3 spent 0.456min in the reactor then V= --------------------------

14.   Some Non linear finite difference equations can be solved analytically because they can be transformed to ------------------------------ equations

15.   The degree of a finite difference equation is the highest --------------------- of the dependent variable

16.   The relation between SD and variance is given by ------------------------–

17.   Standard Deviation (SD) = -----------------------------

18.   The parameter that gives a good measure of the deviations of the x's around their mean is ----------

19.   The solution of linear finite difference equation is similar to _____

20.   The complete solution of linear differential equation is made up of ----------------------- and particular solution

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Code No: 56036   **Set No. 2**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
III B.Tech. II Sem., II Mid-Term Examinations, April – 2014
CHEMICAL ENGINEERING MATHEMATICS
Objective Exam

Name: _____ Hall Ticket No. ⬚⬚⬚⬚⬚ A ⬚⬚⬚⬚

Answer All Questions. All Questions Carry Equal Marks.Time: 20 Min. Marks: 10.

I   **Choose the correct alternative:**

1.   Order of a finite difference equation is determined by the ----- of the highest
   difference   [   ]
   A. Order   B. degree   C. Both   D. None

2.   The relation between D and E   [   ]
   A. $E = e^{hD}$ B. $E = Hd$ C. $E = e^{h/D}$ D. $E = h/D$

3.   The order of $y_n + 2y_{n-2} = 0$ is --------------   [   ]
   A. 1   B. 2   C. -2   D. n

4.   Graphical method will work for all ---- order equations provided they can be separated into a
   simple form.   [   ]
   A. Third   B. Second   C. First   D. Zero

5.   The parameter that gives a good measure of the deviations of the *x*'s around their mean
   is ---   [   ]
   A. SD   B. Variance   C. both   D. None

6.   If the no of factors are 2 then no of treatment combinations are ---   [   ]
   A. 4   B. 2   C. 3   D. 1

7.   If the no of factors are 3 then no of treatment combinations are ---   [   ]
   A. 4   B.6   C. 3   D. 8

8.   The realation between the Operators E and ∇ [   ]
   A. $E = 1 - \nabla$ B. $E = \nabla$ C. $E = 1 + \nabla$ D. $\nabla 1 - E^{-1}$

9. $\Delta \nabla =$ [   ]
   A. $\Delta - \nabla$ B. $\Delta + \nabla$ C. Δ / ∇ D. ∇ / Δ

10.   Relation between E, y_1 and y_0 is   [   ]
   A. $Ey_1 = y_0$ B. $E^2 y_1 = y_0$ C $Ey_0 = y_1$ D. $E^2 y_0 = y_1$

II Fill in the blanks

11. Some Non linear finite difference equations can be solved analytically because they can be transformed to ----------------------------- equations

12. The degree of a finite difference equation is the highest --------------------- of the dependent variable

13. The relation between SD and variance is given by ------------------------–

14. Standard Deviation (SD) = ------------------------------

15. The parameter that gives a good measure of the deviations of the x's around their mean is ----------

16. The solution of linear finite difference equation is similar to _____

17. The complete solution of linear differential equation is made up of ---------------------- and particular solution

18. The Particular Integral of $(E+5) y_n = 3\rho^n$ is ------------------

19. Kremser Brown Equation is given by -----------------------

20. If 10,000lb/hr of pure liquid A of density 60lb/ft^3 is entering into a reactor of volume V ft^3 spent 0.456min in the reactor then V= --------------------------

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Code No: 56036   **Set No. 3**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
III B.Tech. II Sem., II Mid-Term Examinations, April – 2014
CHEMICAL ENGINEERING MATHEMATICS
Objective Exam

Name: _____ **Hall Ticket No.** ☐☐☐☐☐ A ☐☐☐☐

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I   **Choose the correct alternative:**

1.   The order of $y_n + 2y_{n-2} = 0$ is --------------   [   ]
    A. 1   B. 2   C. -2   D. n

2.   Graphical method will work for all ---- order equations provided they can be separated into a simple form.   [   ]
    A. Third   B. Second   C. First   D. Zero

3.   The parameter that gives a good measure of the deviations of the *x*'s around their mean is ---   [   ]
    A. SD   B. Variance   C. both   D. None

4.   If the no of factors are 2 then no of treatment combinations are ---   [   ]
    A. 4   B. 2   C. 3   D. 1

5.   If the no of factors are 3 then no of treatment combinations are ---   [   ]
    A. 4   B.6   C. 3   D. 8

6.   The realation between the Operators E and ∇ [   ]
    A. $E = 1 - \nabla$ B. $E = \nabla$ C. $E = 1 + \nabla$ D. $\nabla 1 - E^{-1}$

7. $\Delta \nabla =$ [   ]
    A. $\Delta - \nabla$ B. $\Delta + \nabla$ C. Δ / ∇ D. ∇ / Δ

8.   Relation between E, y_1 and y_0 is   [   ]
    A. $Ey_1 = y_0$ B. $E^2 y_1 = y_0$ C $Ey_0 = y_1$ D. $E^2 y_0 = y_1$

9.   Order of a finite difference equation is determined by the ----- of the highest difference   [   ]
    A. Order   B. degree   C. Both   D. None

10.   The relation between D and E   [   ]
    A. $E = e^{hD}$ B. $E = Hd$ C. $E = e^{h/D}$ D. $E = h/D$

II   Fill in the blanks

11.   The relation between SD and variance is given by ------------------------–

12.   Standard Deviation (SD) =   ------------------------------

13.   The parameter that gives a good measure of the deviations of the x's around their mean is ----------

14.   The solution of linear finite difference equation is similar to _____

15.   The complete solution of linear differential equation is made up of ---------------------- and particular solution

16.   The Particular Integral of (E+5) y_n = $3\rho^n$ is ------------------

17.   Kremser Brown Equation is given by -----------------------

18.   If 10,000lb/hr of pure liquid A of density 60lb/ft^3 is entering into a reactor of volume V ft^3 spent 0.456min in the reactor then V= --------------------------

19.   Some Non linear finite difference equations can be solved analytically because they can be transformed to   ------------------------------ equations

20.   The degree of a finite difference equation is the highest --------------------- of the dependent variable

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Code No: 56036   **Set No. 4**

Name: _____ Hall Ticket No. ⬚⬚⬚⬚⬚ **A** ⬚⬚⬚⬚

Answer All Questions. All Questions Carry Equal Marks.Time: 20 Min. Marks: 10.

I   **Choose the correct alternative:**

1.   The parameter that gives a good measure of the deviations of the x's around their mean is ---   [   ]
    A. SD   B. Variance   C. both   D. None

2.   If the no of factors are 2 then no of treatment combinations are ---   [   ]
    A. 4   B. 2   C. 3   D. 1

3.   If the no of factors are 3 then no of treatment combinations are ---   [   ]
    A. 4   B.6   C. 3   D. 8

4.   The realation between the Operators E and ∇ [   ]
    A. $E = 1 - \nabla$ B. $E = \nabla$ C. $E = 1 + \nabla$ D. $\nabla 1 - E^{-1}$

5. $\Delta \nabla =$ [   ]
    A. $\Delta - \nabla$ B. $\Delta + \nabla$ C. Δ / ∇ D. ∇ / Δ

6.   Relation between E, y_1 and y_0 is   [   ]
    A. $Ey_1 = y_0$ B. $E^2 y_1 = y_0$ C $Ey_0 = y_1$ D. $E^2 y_0 = y_1$

7.   Order of a finite difference equation is determined by the ----- of the highest difference   [   ]
    A. Order   B. degree   C. Both   D. None

8.   The relation between D and E   [   ]
    A. $E = e^{hD}$ B. $E = Hd$ C. $E = e^{h/D}$ D. $E = h/D$

9.   The order of $y_n + 2y_{n-2} = 0$ is --------------   [   ]
    A. 1   B. 2   C. -2   D. n

10.   Graphical method will work for all ---- order equations provided they can be separated into a simple form.   [   ]
    A. Third   B. Second   C. First   D. Zero

II   Fill in the blanks

11.   The parameter that gives a good measure of the deviations of the x's around their mean is ----------

12.   The solution of linear finite difference equation is similar to _____

13.   The complete solution of linear differential equation is made up of ---------------------- and particular solution

14.   The Particular Integral of $(E+5)$ $y_n = 3\rho^n$ is ------------------

15.   Kremser Brown Equation is given by ----------------------

16.   If 10,000lb/hr of pure liquid A of density 60lb/ft^3 is entering into a reactor of volume V ft^3 spent 0.456min in the reactor then V= --------------------------

17.   Some Non linear finite difference equations can be solved analytically because they can be transformed to ----------------------------- equations

18.   The degree of a finite difference equation is the highest -------------------- of the dependent variable

19.   The relation between SD and variance is given by -----------------------–

20.   Standard Deviation (SD) = ------------------------------

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