Kingdom of Saudi Arabia
Ministry of Higher Education
College of Computer
Department of Computer Science

Qassim University جامعة القصيم

Mid Term Exam –II (1440-1441) **411**
Course Code: Math 218 (I Sem)
Date: 17.11.2019 & Time: One Hour
Max. Marks: 20

NAME: **ID:**

Answer All Questions:

Section-A
(Objective Questions) **(3×1=3 Marks)**

Choose the appropriate answer

1. $L(\text{Sinh}\,t)$ is equal to (a) $\frac{s}{s^2-k^2}$ (b) $\frac{1}{s^2-k^2}$ (c) $\frac{k}{s^2-k^2}$ (d) None of these.

2. $L^{-1}\left(\frac{1}{s^5}\right)$ is equal to

   (i) $\frac{t^6}{6!}$ (ii) $\frac{t^4}{4!}$ (iii) $\frac{t^5}{5!}$ (iv) None of these.

3. If $m_1 \neq m_2$ then solution of $ay''+by'+cy=0$

   (i) $y = c_1e^{m_1x} + c_2e^{m_2x}$ (ii) $y = c_1x^{m_1} + c_2x^{m_2}$

   (iii) $y = c_1e^{m_1x} + c_2xe^{m_2x}$ (iv) None of these

Section B (3×3=9Marks)

4. Solve the differential equation $x^2y''+6xy'+4y=0$.

5. Evaluate $L[5e^{2t} + 4\cos 3t]$.

6. Find the differential operator that annihilates $xe^{3x} + 4x^3$.

Section C (2×4=8 Marks)

7. Solve $y''+5y'+6y=e^{3x}$ by variation of parameter.

8. Solve $\frac{d^2x}{dt^2}+4x=0$ subject to initial value $x(0)=2$ *and* $\left.\frac{dx}{dt}\right|_{t=0}=0$.