

Dr. eng Khaled El Naggar

| Benha University Faculty of Engineering- Shoubra Duration : 1 hour |  | Midterm exam 2 Date <br> Mathematics \& Computer (B)  | $\begin{gathered} \text { April } 2013 \\ \text { Code: MDE } 232 \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| Answer all the following questions | No. of questions | : 2 Total Mark: 20 | marks |
| I) Find the constants of the curve $\mathrm{y}=\frac{1}{\mathrm{a} \sin \mathrm{x}+\mathrm{b} \ln \mathrm{x}+\mathrm{cx}^{2}}$ that fit $(2,101),(13,147),(20,310)$ |  |  |  |
| II) Derive the formula to solve the following P.D.E. numerically |  |  |  |
| $2 \mathrm{U}_{\mathrm{t}}=\mathrm{U}_{\mathrm{xx}} 0<\mathrm{x}<1$, B.C. $: ~ \mathrm{U}(0, \mathrm{t})=3, \mathrm{U}(1, \mathrm{t})=2$, I.C. $: ~ U(x, 0)=3-\mathrm{x}^{2}, \mathrm{~h}=0.25, \mathrm{k}=1$. |  |  |  |

## Dr. eng Khaled El Naggar

| Benha University Faculty of Engineering- Shoubra Duration : 1 hour |  | Midterm exam 2 Date Mathematics \& Computer (B) | $\begin{gathered} \text { April } 2013 \\ \text { Code: MDE } 232 \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| Answer all the following questions | No. of questions | : 2 Total Mark: 20 | marks |
| I) Find the constants of the curve $\mathrm{y}=\frac{1}{\mathrm{a} \sin \mathrm{x}+\mathrm{b} \ln \mathrm{x}+\mathrm{cx}^{2}}$ that fit $(2,101),(13,147),(20,310)$ |  |  |  |
| II) Derive the formula to solve the following P.D.E. numerically |  |  |  |
|  |  |  |  |

