Pokhara University

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| Level: Bachelor | Semester – Fall | Year : 2011 |
| Programme: BE | | Full Marks: 100 |
| Course: Electronic Circuits | | Pass Marks: 45 |
| Time : 3hrs. |

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| *Candidates are required to give their answers in their own words as far as practicable.* |
| *The figures in the margin indicate full marks.* |
| Attempt all the questions. |

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| VCC=12 V  V0  RL=20K  β1  R1  RC  R1/  RC/ | 1. For the emitter follower circuit, find Av, Ain, Zin and Zo. 2. In the figure R1=R1'=0.6 mega ohm, Rc=Rc'=5 kilo ohm, Vcc=12v, RL=20 kilo ohm. Find Av1, Av2 and Av in db   re1=re2=15  1= 2=100    β2 | 7  8 |
|  | 1. Draw the frequency response of an RC coupled amplifier and show that the gain –bandwidth product is constant. 2. What do you mean by power amplifier? Explain the operation of push-pull amplifier with output transformer, with the help of diagram. | 7  8 |
|  | 1. An amplifier gain changes by ± 10%. Using negative feedback the amplifier is to be modified to yield a gain of 100 with ± 0.01% variation. Find the required open loop gain of the amplifier and amount of negative feedback. 2. What is Oscillator? Design a Wein bridge oscillator whose oscillation frequency is 25 KHz. | 7  8 |
|  | 1. Draw and explain about the 8-pin LM741 op-amp IC. What are the ideal characteristics and features of op amp? 2. Design an operational amplifier circuit to produce output VO = -8V1+ 5V2+ 0.5V3 - 4V4. | 8  7 |
|  | 1. Design the multiplier using log-anti-log amplifier. 2. Explain the term resolution and accuracy in ADC/DAC. Explain applications of ADC/DAC. | 7  8 |
|  | 1. Design a 4-bit weighted-resistor DAC whose full-scale output is -10v. Logic levels are1= +5v and 0 = 0v. What is the output voltage when the input is 1010? Also draw a diagram. 2. Write the concept of Switch Mode Voltage Regulator using buck and boost regulator with neat sketches. | 7  8 |
|  | Write short notes on **any two:**   1. VCO 2. Differential gain of emitter coupled 3. Distortion | 2×5 |