Pokhara University

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| Level: Bachelor | Semester – Fall | Year : 2012 |
| 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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|  | 1. What is a multistage amplifier circuit? Explain 2-stage RC coupled amplifier and obtain the relationship for the overall gain of the amplifier. 2. Darlington pair is also called "super beta" transistor comment and prove it | 8  7 |
|  | 1. Explain the effect of coupling and bypass capacitor on the frequency response. Why cut off frequency are called 3dB frequency 2. Explain transformer coupled push-pull amplifier. The push-pull amplifier has VCC=20V and RL=10Ω. The total number of turns on the primary winding is 100 and secondary winding has 50 turns. Assume that transformer has resistance. Find the power delivered to the load and power dissipated in each transistor when transistor power dissipation is maximum. | 8  7 |
|  | 1. “Negative feed back has higher gain stability” do you agree with this statement? Yes or no prove it. 2. How can you make the Hartley's oscillator using op-amp and derive it's oscillation frequency | 7  8 |
|  | 1. Compare the ideal and practical characteristics of an operational amplifier. Design an operational amplifier circuit using two inverting configurations to produce the output V0=-10V1+5V2+0.5V3-20V4. 2. What is multivibrator? Explain the working principle of astable multivibrator using operation amplifier. | 8  7 |
|  | 1. Draw the circuit diagram of analog voltage multiplier and divider and derive the expression of output voltage 2. Explain about successive approximation A/D converter. | 8  7 |
|  | 1. Determine the output voltages caused by each bit in a 4-bit voltage mode R-2R ladder if the input levels are '0'=0V and '1'=+12V. Determine the resolution and full scale output of this ladder circuit. Find out the voltage from the above ladder for a digital input of 1011. 2. Draw the block diagram of series voltage regulator and shunt voltage regulator and explain their operation. | 8  7 |
|  | Write short notes on **any two:**   1. Sigma-Delta A/D conversion 2. Differential amplifier 3. Instrumentation amplifier | 2×5 |