

大同大學 九十九 學年度研究所碩士在職班入學考試試題

考試科目：科技英文

所別：電機工程研究所

共 1 頁

註：本次考試 不可以參考自己的書籍及筆記； 不可以使用字典； 不可以使用計算器。

請將以下英文段落翻譯成中文

1. In fact, Green ICT acts as part of the cure for today's economic crisis. The creation and utilization of information and communication technologies, products, and services can reduce energy and resources, optimizes operational efficiency and achieve savings while serving the purpose of reducing greenhouse gas emissions. Greener ICT technologies, products, or services will undoubtedly become main stream in the wake of increasing global concerns on climate change and environmental deterioration. (20%)
2. Amplification is an essential function in most analog (and many digital) circuits. We amplify an analog or digital signal because it may be too small to drive a load, overcome the noise of a subsequent stage, or provide logical levels to a digital circuit. Amplification also plays a critical role in feedback systems. (20%)
3. The degrees of freedom of a mechanism are the number of independent parameters or inputs needed to specify the configuration of the mechanism completely. Except for some special cases, it is possible to derive a general expression for the degrees of freedom of a mechanism in terms of the number of links, number of joints, and types of joints incorporated in the mechanism. (20%)
4. This more efficient operation of the PWM switching power supply is done by "chopping" the direct current (dc) input voltage into pulses whose amplitude is the magnitude of the input voltage and whose duty cycle is controlled by a switching regulator controller. Once the input voltage is converted to an ac rectangular waveform, the amplitude can be stepped up or down by a transformer. Additional output voltages can be derived by adding secondaries to the transformer. Ultimately these ac waveforms are then filtered to provide the dc output voltages. (20%)
5. Let $p, q,$ and f be continuous on an open interval I . Let x_0 be in I and let A and B be any real numbers. Then the initial value problem
$$y'' + p(x)y' + q(x)y = f(x), \quad y(x_0) = A, \quad y'(x_0) = B$$
has a unique solution defined for all x in I . (20%)

The End