



1. A real sequence $\{x_n\}$ satisfies $7x_{n+1} = x_n^3 + 6$ for $n \geq 1$.
If $x_1 = \frac{1}{2}$, find its limit. (10 分)
2. The formula in the Mean-Value Theorem can be written as follow:
$$\frac{f(x+h) - f(x)}{h} = f'(x+\theta h),$$
 where $0 < \theta < 1$. Determine θ as function of x and h when $f(x) = x^2$. (10 分)
3. Find the volume of the region bounded by the parabolic cylinder $z = 4 - x^2$ and the planes $x = 0$, $y = 0$, $y = 6$, $z = 0$. (5 分)
4. Evaluate $\int_{-1}^1 \frac{dx}{\sqrt[3]{x+1}}$. (5 分)
5. Let $S_n = nxe^{-nx^2}$, $n = 1, 2, 3, \dots$, $0 \leq x \leq 1$. Determine whether
$$\lim_{n \rightarrow \infty} \int_0^1 S_n(x) dx = \int_0^1 \lim_{n \rightarrow \infty} S_n(x) dx.$$
 (5 分)
6. For what values of x does $\sum_{n=1}^{\infty} \frac{1}{2n-1} \left(\frac{x+2}{x-1}\right)^n$ converge? (5 分)
7. If $y = x^x$, compute $\frac{dy}{dx}$. (5 分)
8. Evaluate $\int_0^{\infty} \frac{\sin^3 x}{x} dx$. (5 分)
9. Find the indefinite integral $\int \frac{e^x + e^{-x}}{2} \cos x dx$. (10 分)
10. Compute $\sum_{x=0}^{\infty} \frac{1}{2^x x!}$. (10 分)
11. Evaluate $\int_0^{\infty} e^{-x^2} dx$. (10 分)
12. Find the equation of the tangent line to the graph $y^2 - x^2 y - x^3 - 1 = 0$ at the point $(x_0, y_0) = (1, 2)$. (10 分)
13. Evaluate the summation $\sum_{n=1}^{\infty} n^2 \left(\frac{1}{3}\right)^n$. (10 分)



國立雲林科技大學

100 學年度碩士班暨碩士在職專班招生考試試題

系所：企管系、國企所、創管學程

科目：管理概論(1)

1. 請針對「激勵領導」(Motivation & Leadership)的早期理論與新近理論，各舉三個〔早期與新近各三個，共 6 個〕，並簡要說明之。(每個理論 3 分，共 18 分)
2. 大多數的學者專家皆同意經營者必須執行五項基本職能：規劃、組織、任用、領導、控制，每一項職能皆涵括一些特定的活動。請問您如何執行以上五項職能，讓一個校園社團起死回生？請分項列舉您所企劃執行的任務或活動，並根據管理理論和組織發展／變革理論分析這些任務及活動。(18 分)
3. 請問您如何創造一個「友善的職場」文化 (Friendly Workplace)？請根據管理理論和組織文化理論說明之。(7 分)
4. 請閱讀以下短文，並請您闡述您對此幹細胞生技公司〔Advance Cell Technology〕的看法。(7 分)



Ethical Dilemma in Management

STEM CELL RESEARCH

Advanced Cell Technology is embarking on a major activity—"to produce the world's first-ever cloned human embryo . . . a microscopic version of an already living person."¹⁸ Michael West, chief executive of Advanced Cell Technology, and Robert Lanza, vice president of Medical and Scientific Development, have begun implementation of this goal by interviewing women to serve as egg donors. Combining these eggs with a human cell produces an embryo that permits scientists at Advanced Cell to capture stem cells. As the stem cells are captured, the embryo is destroyed. Stem cells are believed to be able to develop into human tissue that could help cure a variety of diseases or even repair a severed spinal cord.

Advanced Cell Technology's goal, of course, faces major debate. People supporting both sides of the issue have strongly voiced their opinions. On one hand, if such research is proven effective, many diseases as we know them today—such as Parkinson's disease and muscular dystrophy—could be eliminated, resulting in both a major scientific breakthrough in our world and

clearly a major financial coup for Advanced Cell. Moreover, similar research is being conducted in other parts of the globe, such as Europe, where it has received support. And to assist in these endeavors and ensure that the highest ethics enter into all decisions made, Michael West formed an ethical board of advisors consisting of scientists and professors of religion.

But critics of such research see the situation differently. They view stem cell research as the next step toward cloning humans—and, at times, liken it to creating a "great society." Religious groups, too, voice this concern over Advanced Cell's decisions, claiming that it is working in an area it shouldn't be. They also say that making decisions regarding such research raises significant ethical issues, particularly as to how far this research can go. The federal government has also entered into the discussion, with President George W. Bush setting specific regulations on what kind of stem cell research is funded by the government. Even some Advanced Cell ethics board members have resigned, complaining that Advanced Cell is more interested in "obtaining patents in the field and using the board as a rubber stamp."

Do you believe that a company such as Advanced Cell Technology can make ethical decisions in this arena when so much is at stake? Should public opinion keep a company from doing something simply because it is unpopular—even though it is legal? What's your opinion?

5. 管理的目的為何？要具備那些條件，方能成為一位成功的管理者？(25 分)
6. 當你的部屬，因附近同行業者採取高薪挖角動作，而人心浮動、工作情緒不穩時，你會採取什麼樣的激勵措施來安撫人心？(25 分)