

# 國立臺北科技大學九十八學年度碩士班招生考試

系所組別：3140 土木與防災研究所丁組

## 第一節 工程英文 試題

第一頁 共二頁

### 注意事項：

1. 本試題共五題組，計 50 小題，每小題 2 分，配分共 100 分。
2. 請標明大題、子題編號作答，不必抄題。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

請根據每題中的文意，填入最符合空格之英文字的代表字母。  
(2 x 50 = 100)

### 第一組 GROUP I

a. initialization b. interaction c. consolidation d. corrosion e. verification  
f. application g. irradiation h. infrastructure i. extremes j. remediation

- Civil engineering is the 01) \_\_\_ of physical and scientific principles.
- Civil Engineering covers issues including public 02) \_\_\_ renewal and environmental 03) \_\_\_.
- Topics include basic simulation methodology; design of simulation experiments; model 04) \_\_\_; validation and 05) \_\_\_.
- The use of admixtures; choice of cements; environmental influences; methods of 06) \_\_\_ and testing techniques will be studied.
- This course will investigate variations or 07) \_\_\_ in temperature or moisture, exposure to chemical or biological activity, aging, or solar 08) \_\_\_.
- Case studies of problems in structures due to reinforcement 09) \_\_\_, alkali-aggregate reaction and free-thaw cycling will be investigated in detail.
- The course examines the 10) \_\_\_ between the building envelope and the indoor and outdoor climate.

### 第二組 Group II

a. assessment b. advances c. liability d. uncertainty e. framework  
f. durability g. perspective h. permeability i. modeling j. disputes

- Students are taught how to combine theory, measurement and 11) \_\_\_ to develop a good understanding of the problems at hand.
- The history of civil engineering is intricately linked to 12) \_\_\_ in understanding of physics and mathematics throughout history.
- This course will explore the building construction industry from a management 13) \_\_\_. The building construction process will be placed in context of how construction and design disciplines are coordinated.
- The course presents a systems evaluation 14) \_\_\_, including environmental, economic and policy analyses methods for evaluating engineering activities.
- Specific topics include life cycle 15) \_\_\_; materials accounting; green engineering; risk assessment and management; benefit cost and cost effectiveness analyses; and 16) \_\_\_ analysis.
- Emphasis is placed on how to avoid construction contract problems, as well as how 17) \_\_\_ may be efficiently resolved once they arise. Issues of payment security, bankruptcy, liens and professional 18) \_\_\_ are also studied.
- Material aspects of concrete production will be dealt with in the context of various performance criteria with emphasis on 19) \_\_\_.
- Methods include those for pore structure and surface area by BET; 20) \_\_\_ to vapor, gas and liquids; mineralogy by optical microscopy x-ray diffraction and thermal analysis.

### 第三組 GROUP III

a. sustainable b. ranging c. random d. ecological e. commencing  
f. alternative g. unacceptable h. dynamic i. hands-on j. pressing

- Special emphasis is on 21) \_\_\_ failure and fragmentation with applications in mining and construction industries.
- Civil engineering might be considered properly 22) \_\_\_ between 4000 and 2000 BC in Ancient Egypt.
- Civil Engineering deals with some of the most 23) \_\_\_ problems of our world and aims to provide 24) \_\_\_ solutions to energy needs.
- This program emphasizes 25) \_\_\_ design projects and case studies that supply context and motivation.
- Civil engineering is a wide 26) \_\_\_ profession, including several separate specialized sub-disciplines.

注意：背面尚有試題

第二頁 共二頁

- A significant emphasis of the course is given to long-term planning of sustainable infrastructure: asset management and the fundamentals of 27) \_\_\_ economics.
- This course emphasizes techniques appropriate for investigating the 28) \_\_\_ behavior of complex civil engineering systems.
- This course will study how to avoid 29) \_\_\_ effects on the materials of the building.
- This course investigates the issues and techniques for the evaluation of 30) \_\_\_ plans, designs and policies for civil engineering systems.

第四組 GROUP IV

a. demanding   b. contaminated   c. legal   d. particular   e. acoustic  
f. geo-spatial   g. monitoring   h. residual   i. porous   j. cultural

- A study of building materials, components, details and construction methods with respect to the maintenance of the required temperature, moisture and 31) \_\_\_ aspects of the interior of buildings.
- Topics covered include: inspection and monitoring of concrete structures (including instrumentation and non-destructive testing); identification of material failure mechanisms; 32) \_\_\_ service life prediction; life cycle cost analysis; and methods of repair and rehabilitation.
- Principles and cases are discussed with a view to providing students with an understanding of the 33) \_\_\_ framework surrounding contractual documents.
- Topics include: Mechanics of saturated and unsaturated fluid flow in 34) \_\_\_ media; Confined and unconfined flow; Non-reactive and reactive contaminant transport on groundwater systems; Assessment of environmental impacts of waste disposal operations; Remediation of 35) \_\_\_ groundwater.
- Water resources systems are physically complex and the solution of appropriate mathematical models is computationally 36) \_\_\_.
- Topics include: society as a 37) \_\_\_ system; industrialization as a process that simultaneously transforms technology, society and the biosphere; the modern corporation; underdevelopment and technology transfer; and sustainable development.
- This course will address: Principles and applications of space-based systems for 38) \_\_\_ data acquisition with 39) \_\_\_ focus on Global Navigation Satellite Systems, Remote Sensing and Geodetic Satellite Missions.
- Applications for small to mid-scale engineering problems and larger scale Earth 40) \_\_\_ systems will be addressed.

第五組 GROUP V

a. activate   b. complement   c. demonstrate   d. review   e. apply

f. reduce   g. provide   h. integrate   i. present   j. affect

- Performance characteristics of various wall and roof systems will be presented together with the various factors that 41) \_\_\_ the design of the climate partition. These factors include the control of heat, moisture and radiation.
- This course covers how to 42) \_\_\_ distributed computing in creating a collaborative project development environment and how to share and 43) \_\_\_ information.
- This session aims to 44) \_\_\_ : Procedures for efficient numerical solution of the governing equations; and Problems of non-linearity, sensitivity to data and computational complexity.
- This project will 45) \_\_\_ the use and nature of water resources systems
- Specific processes covered include sedimentation, coagulation, filtration, and disinfection, with an overview of reactor theory. Laboratory experiments are designed to support and 46) \_\_\_ the lecture material.
- This course will examine how to 47) \_\_\_ sludge process, biological nutrient removal processes, and anaerobic processes for waste treatment and energy recovery.
- Laboratory experiments 48) \_\_\_ experience in acquiring and interpreting biological treatment data.
- Laboratory experiments will 49) \_\_\_ the lectures in which students learn some of the standard analysis techniques of aquatic chemistry.
- This course develops a conceptual framework for understanding technology-society interactions in order to 50) \_\_\_ the burdens imposed on society and the environment.