

UNITED NATIONS



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2009  
NATIONAL COMPETITIVE  
RECRUITMENT EXAMINATION  
(P-1/P-2)

Notice and application form are also available for download from:

[www.un.org/Depts/OHRM/examin/exam.htm](http://www.un.org/Depts/OHRM/examin/exam.htm) (in English)  
[www.un.org/french/Depts/OHRM/examin/fexam.htm](http://www.un.org/french/Depts/OHRM/examin/fexam.htm) (in French)

(05-August-2008)

**UNITED NATIONS SECRETARIAT**  
**2009 NATIONAL COMPETITIVE RECRUITMENT EXAMINATION FOR**  
**JUNIOR PROFESSIONAL OFFICERS (P-1/P-2)**

**Outline of the Exam**

1. The United Nations Secretariat announces that a competitive examination will be held under the direction of a United Nations Board of Examiners to recruit nationals of selected member states at the junior professional level (P-1/P-2) for employment at United Nations offices.\*

2. The examination will be held in the following disciplines:

**Administration**  
**Economics**  
**Finance**  
**Information Technology**  
**Public Information**  
**Security**  
**Social Affairs**  
**Statistics**

3. A general description of the duties performed in these disciplines and specific academic qualifications required are given in Annex I of this announcement.

**Eligibility**

4. This examination is open to men and women who are nationals of the member states participating in the 2009 National Competitive Recruitment Examination. Qualified women are particularly encouraged to apply.

5. Applicants should hold at least a first-level university degree relevant to the discipline in which they would like to take the examination. Furthermore, applicants should not be more than 32 years old on 31 December 2009 (should be born on 1 January 1977 or after). Fluency in either English or French is required.

6. In instances where a large number of applications are received by the Board of Examiners (more than 40 per discipline in a given country), the Board reserves the right to admit to the examination only the most qualified candidates based on a review of the qualifications which are over and above the minimum entrance criteria set out in paragraphs 4 and 5. These include, but are not limited to, advanced university degrees, diplomas or certificates; knowledge of additional official languages of the United Nations (English/French, Arabic, Chinese, Russian and Spanish); a broader spectrum of work experience or any published works.

**Procedure of the Examination**

7. The examination will consist of a written examination and an interview.

8. The written examination consists of the following two parts:

(a) a general paper which tests drafting skills (forty-five minutes); and

(b) a specialized paper (three hours and forty-five minutes) which tests the substantive knowledge of the particular discipline that the candidate is applying for.

In cases of high number of candidates sitting for the exam in a given occupational group, the essay section of the specialized paper will be eliminatory.

9. The written examination questions are given in English and French, the two working languages of the Secretariat. Candidates must write their answers for the general paper in English or French. However, they may write their answers for the specialized paper in English, French or any of the other four official languages of the Secretariat, i.e. Arabic, Chinese, Russian or Spanish.

10. The written examinations will tentatively take place on 24 February 2009. The exact time will be announced in the convocation notification referred to in paragraph 29 of this announcement.

11. Travel expenses to and from the site of the written examination are NOT paid by the United Nations.

12. On the basis of performance in the written examination, the Board of Examiners will invite selected candidates to the interview, which will normally take place in the second half of 2009.

13. The interview will be conducted in English or French, the two working languages of the Secretariat.

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\* Major United Nations offices are located in Addis Ababa, Beirut, Bangkok, Geneva, Mexico, Nairobi, New York, Santiago and Vienna

14. The travel of candidates to and from the location of the interview will be at the expense of the United Nations in accordance with its rules.

15. Following the completion of the interviews, the Board of Examiners will recommend to the Assistant Secretary-General for Human Resources Management the most suitable candidates.

16. Successful candidates will be placed on a reserve list of qualified candidates.

17. The decisions of the Board of Examiners regarding the results will be final and are not subject to appeal. The Board does NOT release individual results.

18. Successful candidates recruited at the P-2 level will serve at the UN Headquarters in New York or at other duty stations in Africa, Asia, Europe or Latin America. Junior Professionals Officers will be subject to a mandatory Managed Reassignment Programme. The purpose of the Programme is to provide Junior Professional staff with enhanced orientation, training, mobility and career support during the first five years of service at the Professional level, in order to facilitate their adjustment and to accelerate the learning period leading to productive work and job satisfaction as international civil servants. To this effect, staff members included in the Programme shall obtain experience in two different functions during their first five years of service.

### **UN Salary and Benefits**

19. For a staff member without dependents, the annual starting salary will normally be between US\$43,662 and US\$55,924 net of income tax. In addition, staff members are entitled to a post adjustment, which varies according to the cost of living of each duty station (for example, it is currently between US\$26,983 and US\$34,561 per year in New York). For a staff member with dependents, the annual starting salary will be between US\$46,549 and US\$59,967. (In New York, the post adjustment for staff members with dependents is currently between US\$28,767 and US\$37,060.)

20. In addition, staff members are entitled to the following benefits:

(a) Dependency benefits: at present, US\$ 1,780 per year for each eligible child;

(b) Participation in the United Nations Joint Staff

Pension Fund. The staff member contributes 7.9% of the pensionable remuneration and the United Nations contributes twice this rate. The Pension Fund provides disability, retirement and survivors' benefits as well as lump sum withdrawals;

(c) Medical and dental insurance contribution. The United Nations contributes the greater portion of the premiums, which depend on the plan selected and on the family status. As an example, currently at Headquarters, the staff member can pay between 2.63% and 8.29% of his/her "medical net" salary (gross salary less staff assessment plus some allowances).

21. Staff members who are assigned to a duty station which is not in their home country are also entitled to:

(a) Education grant and education grant travel per scholastic year for each eligible dependent child;

(b) Home leave to their country of nationality every two years, with the travel expenses of the staff member and his or her spouse and eligible dependent children paid by the United Nations. The first home leave is granted only if the staff member's service is expected to continue at least six months beyond the initial two-year appointment.

22. Staff members who are internationally recruited to the duty station may also be entitled to:

(a) Assignment grant at the time of recruitment and repatriation grant upon separation. The assignment grant is based on the Daily Subsistence Allowance rate set for each duty station. The repatriation grant can be as high as 58% of the quoted net salary depending on the length of continuous service away from the home country and family status;

(b) Removal of household effects, depending on the duty station. Up to 8,150 kilograms are allowed for the removal of household effects;

(c) Rental subsidy of up to 40% of the actual rent if the rent exceeds a specified percentage of the staff member's emoluments and if the rent falls within reasonable maximum rent levels.

23. The determination of salary of individual successful candidates is based on their level of academic qualifications and the length of their progressive and relevant professional experience.

24. UN staff members are entitled to 30 days of paid leave a year. In addition, staff is also eligible for other leave entitlements such as 16 weeks of

maternity leave as well as paternity, family, adoption, sickness and sabbatical leave.

### **Application Procedure**

25. All those who believe in the purposes and ideals of the United Nations and who wish to participate in the competitive examination are requested to fill out accurately and completely, in English or French, the application form, which is included in this announcement. Please detach the application form from this announcement before sending it. Application forms are also available on the Internet ([www.un.org/Depts/OHRM/examin/exam.htm](http://www.un.org/Depts/OHRM/examin/exam.htm))

26. Candidates should submit their application **once only and by one medium only. DO NOT** send a separate copy by e-mail, fax or regular mail. An acknowledgement of receipt of the application form, along with an application number assigned to each applicant, will be sent to the applicants by e-mail, fax or mail within 30 days. Our preferred mode of communication is by e-mail; therefore, please remember to indicate your e-mail when applying. **You are strongly encouraged to apply as early as possible.** Candidates should keep a proof of submission of their application, for example a copy of the e-mail including the date of submission. In the event that they do not receive an acknowledgement of receipt within 30 days, candidates should resubmit their application together with the proof of their first submission.

27. The decision of the Board of Examiners regarding admission to the examination will be based on a careful review of the application. In order to be considered, applicants must meet the minimum entrance criteria set forth in paragraphs 4 and 5. The Board will subsequently assess the qualifications of the candidates in accordance with the provisions of paragraph 6 above, if applicable, to decide on whether applicants should be admitted to the examination.

28. The decision of the Board of Examiners regarding admission to the examination as well as the discipline for which one is convoked is final and NOT subject to appeal.

29. All candidates will receive notification regarding their admission to the written examination. Applicants may also check the listing of application numbers, as described in paragraph 26, on the Internet by the end of December to find out if they are admitted to the written examination. For candidates that are convoked to the written examination, the notification will include information such as the exact date, time and site of the written examination.

30. Candidates who participate in the written examination will be notified of the results upon completion of the marking of the written examination. Those who are successful in the written examination will receive instructions for the interview.

31. Applicants are responsible for promptly informing the United Nations in writing of any changes in their address. Failure to do so may result in candidates either not being convoked in time or not being convoked at all.

32. The completed application form must be received by the Examinations and Tests Section in New York no later than **31 October 2008**:

**UNITED NATIONS**  
**2009 NCRE, Room S-2575E**  
**Examinations and Tests Section, OHRM**  
**New York, NY 10017, U.S.A.**  
**OR**  
**Fax: (+1) (212) 963-3683**  
**OR**  
**E-mail: [OHRM-NCE2009@un.org](mailto:OHRM-NCE2009@un.org)**

**Late or incomplete applications will NOT be considered.**

**You are strongly encouraged to apply as early as possible due to the high volume of mail received. We will not be able to answer specific questions through e-mail or other means. Please consult the “frequently asked questions” link in our web site.**

## ANNEX I

### DESCRIPTION OF DISCIPLINES

#### **Administration**

Work performed within this group relates to a wide range of assignments in the provision of staff support to the internal operations and projects of the organization. These various areas of support include, but are not limited to, the following:

1. Management of staff resources, which includes work concerned with formulating and implementing policies relating to the management of human resources for the Organization and conducting programmes concerning staff recruitment, training, career development, promotion, compensation, benefits and staff-management relations;
2. Budget analysis, which includes work concerned with reviewing the budgetary requirements of the Organization and making recommendations on the appropriation of funding levels and revenue projections;
3. Management analysis, which includes work concerned with reviewing, examining and evaluating organizational structures and management systems; it also includes recommendations to line management regarding changes in organizational structure, management of physical, financial, and human resources, organization methods, procedures, forms and records management to promote efficiency within units;
4. Procurement management, which includes work concerned with negotiating and contracting for the purchase or rental of equipment, products, supplies and services;
5. Administrative support, which includes work of a general administrative nature concerned with providing staff services for management such as personnel processing, budget preparation control, housekeeping and supplies;
6. General Service management, which includes work concerned with the management, maintenance and security of the physical plant facilities, communication systems and transportation systems of the Organization; the direction of activities of staff engaged in the operation and maintenance of equipment and facilities, and arranging and monitoring the work of outside contractors in this area;
7. Project administration includes work concerned with providing staff support to the Organization's technical assistance, disaster relief and economic development projects. Duties include preparing budgets for projects, purchasing supplies, developing staffing requirements and work plans, mobilizing relief in a disaster situation, arranging such other services necessary to facilitate completion of projects, and researching and developing disaster relief plans in cooperation with other countries. Acceptable first-level university degrees for consideration by the Board for candidates applying in

Administration are as follows: Public or Business Administration, Commerce, Marketing, Human Resources Management or other relevant discipline.

#### **Economics**

Work performed within this occupation relates to a wide range of assignments in which theoretical and practical economic services are provided to the Organization. The tasks of the occupation vary considerably depending upon the assignment and include, but are not limited to, the following: planning, designing and conducting research in a variety of economic areas, such as international monetary reform, agricultural and mineral commodities trade, multilateral trade negotiations, insurance, the impact of external financing, balance of payments, tariffs and restricted business practices on corporations on trade; development and modifications of economic models to provide long-range forecasting and the costs and benefits of alternative world development strategies; conducting seminars and meetings for countries on economic problems; planning, developing and monitoring technical assistance projects in economic areas for developing countries.

Acceptable first-level university degrees for consideration by the Board for candidates applying in Economics are as follows: macroeconomics, microeconomics, international trade, political economy, econometrics, development planning and analysis, economic development and growth, and public economics. Training in fundamental economic theory is a basic requirement.

#### **Finance**

Work performed within this discipline relates to a wide range of assignments in which accounting and auditing services are provided to the Organisation. The tasks of the discipline vary considerably and include, but are not limited to, the following: preparing financial statements about various operations at regular intervals; analysing and modifying accounting systems; approving payment of vouchers for vendors, freight, consultants and travel; approving payrolls; preparing cash-flow projections, financial compliance and operational auditing of accounts, programmes and funds; analysing and recommending modifications to financial control procedures and management practice; auditing contracts to assure completion of service; drafting audit reports.

Acceptable first-level university degrees for consideration by the Board for candidates applying in

Finance are as follows: accounting, actuarial sciences, auditing, business administration (with evidence of having studied modules in auditing, accounting or finance), finance, management (with courses in accounting, auditing or finance), and international business. Any of the following experiences would be an advantage: 2-3 years' working experience in a business or governmental environment in an accounting, budgeting or financial capacity; 2-3 years' working experience in a management auditing/consulting firm; 2-3 years' working experience in an engineering or project management capacity evaluating cost/benefit elements or capital project management.

### **Information Technology**

Work performed within this occupation relates to a wide range of assignments in the development and operation of computer-based information systems, including analysis, programming and operation support, for computer systems which touch, directly or indirectly, many parts of the Organization. The duties of the occupation vary considerably and may include, but not be limited to, some of the following: analysing various informational problems in conjunction with personnel of organizational units and making recommendations on the feasibility and cost benefits of the application of information technology to the problem; selecting appropriate language, techniques and methods for a system; preparing system and programme documentation; testing, modifying and supervising installation of systems and programmes; reviewing the acquisition of information technology equipment; supervising and coordinating the coding of data; writing of computer programmes; monitoring of computer and peripheral machine operations.

Acceptable first-level university degrees for consideration by the Board for candidates applying in Information Technology are as follows: computer science (engineering, programming, software development, or theory), information technology, information management, informatics, telecommunications, and artificial intelligence. For candidates who have no first-level university degree in any of the above-mentioned fields but have at least two years' professional experience in these fields, the degree may be substituted by one of the following first-level university degrees: electrical engineering, electronics, mathematics, physics, robotics, or statistics.

### **Public Information**

Work performed within this field relates to a wide range of assignments in producing and disseminating information about the United Nations, its aims and activities and its policies and programmes to the information media of the world, other organizations and

to the general public. These various services include, but are not limited to, the following:

#### 1. Press and publications

(a) Press activities - includes work concerned with preparing press releases about the United Nations and its activities, preparing background material about meetings and work programmes of the Organization, arranging facilities for the information media, conducting briefings and answering questions about the Organization for the world press.

(b) Publications - includes the preparation of booklets, pamphlets, leaflets, magazines and printed materials about the work of the Organization.

2. Audio-visual media - includes work concerned with the production of radio and television programmes, films, photos and posters about the Organization and its activities. The work involves script writing, interviews, selection of narrators and technical staff, and the co-ordination of the technical aspects to ensure completion and timely distribution of the product to the appropriate facilities. It also includes the preparation of visual displays and exhibits.

3. Public relations and liaison - includes work concerned with informing and educating the public through educational institutions and non-governmental organizations about the Organization and its activities.

This involves the preparation and conducting of lectures and seminars about the Organization, answering public inquiries and providing kits of information material, operating network of the Information Centres, conducting fellowship and internship programmes, arranging seminars and encounters with journalists both at Headquarters and in the field.

Acceptable first-level university degrees for consideration by the Board for candidates applying in Public Information are as follows: communication, journalism, media studies, new media and web design, press, and public relations. Furthermore, candidates with first-level university degree in a field relevant to the work of the Organization, i.e., political science, international relations, modern history, social science, economics, legal affairs, may be considered provided they have relevant working experience in public information as journalist, television, video or radio producer, web site designer, public relations officer or specialist in new media.

### **Security**

Within limits of delegated authority, the Associate Security Officer may be responsible for the following duties:

Preparation of draft security plans for specific areas of operations; Conduct of security assessments, in accordance with the UN Security Risk Management

model, to ensure the safety of staff to enter or return to a location where actual or suspected problems exist; Investigate and prepare reports on minor cases of theft, illegal entry, assault, or other incidents when the extent of the infraction is readily determinable; Development of drafts of specific security threat and risk assessments associated with threats by criminal, terrorist or extremist groups to the UN Organizations system and its individual components. The assessments include electronic crime tracing and determination of the severity and possible impact on the Organization; Development and enhancement, at the local level, of the methodology for risk assessments, maintenance of databases of threats and associated risks; Timely distribution of assessment of risks to UN duty stations and field offices affected by identified threats; Coordination of assessment activities with the appropriate focal points within the Department of Safety and Security as well as security focal points of UN systems organizations; On-site coordination of specific security operations, including but not limited to: VIP visits, evacuation and relocation, convoy movements and response to incidents or emergencies (including those involving casualties); Assist in recruitment, training and supervision of junior staff; Acting in a higher level capacity in the temporary absence of more senior security professionals.

Are considered acceptable: First-level university degrees (Bachelors or equivalent) in relevant field such as criminology, criminal justice, security management or related field. Military or police academy training equivalent to a first-level university degree will also be considered. At least 2 years of progressively responsible experience related to military, police or security occupations. Experience in security analysis and assessments and forensic computer evaluations an asset.

### **Social Affairs**

Work performed within this occupation relates to a wide range of assignments in which social development and welfare services are provided to the Organization.

The tasks of the occupation vary considerably depending upon the assignment and include, but are not limited to, the following: preparation of research reports in a variety of welfare subject areas, such as crime prevention and criminal justice, institutional development and popular participation, social integration and welfare, promotion of equality of men and women, rural development, family planning, youth, rehabilitation of disabled persons, the aging, migrant workers, and development of paraprofessionals;

conducting seminars and meetings for countries on social welfare problems; developing and monitoring technical assistance projects in social welfare areas for developing countries; monitoring illicit drug traffic and preparing research reports about drug movement in the world; interpreting provisions of narcotics-control treaties; assisting farmers to find replacement crops for narcotics; developing and monitoring technical assistance projects to control narcotics.

Acceptable first-level university degrees for consideration by the Board for candidates applying in Social Affairs are as follows: Sociology, Social Science, Rural Development, Women Issues, Human Geography, Anthropology, Development Studies, Environmental Studies, Labour Issues, Public Policy or other relevant discipline.

### **Statistics**

Work performed within this discipline relates to a wide range of assignments in which statistical services are provided to the Organization. The tasks of the occupation vary considerably depending upon the assignment and include, but are not limited to, the following: preparing and designing questionnaires or other research instruments for the collection of statistical data from Member States for the statistical yearbooks and other publications giving comparative world-wide statistics; more generally: collecting, processing and disseminating data from Member States; providing technical assistance to developing countries to assist them in strengthening their national statistical capacity; assisting Member States in developing standardized statistical classifications, definitions and methods in such areas as economic statistics, like industrial, energy and trade statistics and national accounts and environment, social statistics, demography; developing statistical methods for data validation and estimation; conducting research in the area of index calculation and seasonal adjustments.

Acceptable first-level, preferably advanced, university degree for consideration by the Board for candidates applying in Statistics are as follows: Statistics, Mathematics, Economics with a specialization in statistics and/or econometrics, Social Sciences with a specialization in statistics, Demography. Any of the following experiences would be an advantage: 1-2 years' working experience with a National Statistical Office; 1-2 years' working experience in environmental, social, demographic, energy, trade or economics statistics.

**ANNEX II**  
**EXAMINATION SAMPLES**  
**SPECIALIZED PAPER**  
**ADMINISTRATION**

**Essays**

A. The primary responsibility of the purchasing function in a large organisation is to obtain the highest quality products, meeting specifications, at the lowest possible price. Given these basic terms of reference, a procurement officer must carefully review each requisition and make a determination as to whether or not a potential exists for savings or cost reductions and to take appropriate steps to achieve this objective. Describe five ways of achieving savings in the procurement process. Briefly explain a serious problem which can be encountered in each of the five ways you selected.

B. You are the personnel officer in the local office of an international organization located in a large city. The turnover of locally recruited general service personnel is abnormally high. In fact, it is higher than for all other employers: private - state owned or transnationals. Consequences of turnover were strongly criticized in an external audit report on the efficiency of the organization's local office. This report stated "The level of turnover is significant because it is expensive and leads to lost productivity. It is costly because every time an employee leaves, the organization must incur recruitment and training costs. It is costly because there is a period of time which it takes for all new employees to reach their peak effectiveness. During this time, the employee makes mistakes. A strong effort must be made to avoid this waste of resources".

You know why the turnover is occurring: the pay of employees has been low for years. In the meantime new industry has come to the region. Since the population hasn't increased that much, the salary structure of private industry has risen to attract people. This was mentioned in previous internal personnel reports, but the increase of the international organization's salaries has lagged. The organization too often gets those employees who cannot obtain employment elsewhere. They join the organization and remain for a period of time. Once they are trained, they leave for better jobs. A small number of problem staff have had to be terminated at considerable cost to the organization.

What the organization does have is a very generous package of benefits. In fact, it is more generous than that of the other employers in the area. While employees have left for a raise in pay, the result of a survey taken by the organization indicates that the

former employees now employed outside the organization have fewer fringe benefits, including less medical insurance coverage, lower pension benefits, less sick leave, fewer paid holidays and also a smaller allowance for childrens' education benefits. The organization has, however, been unsuccessful in communicating this situation to its staff now on board.

Your office and you have already tried to encourage supervisors to discuss this situation with their staff but in most cases, supervisors have failed to do so. Their excuse is that the benefits are complicated and difficult to explain particularly to new staff, many of whom do not show interest in benefits.

You are requested by your supervisor, the chief of personnel, to prepare a detailed programme of action to improve on the current turnover situation. Explain your detailed plan of action including the target groups which you would address, what procedures you would recommend to be followed and how you would go about implementing such a plan.

**Questions**

1. Briefly explain three different recruitment interview techniques.
2. Identify three situations in which a binding purchase contract can be terminated without penalty or damage to any of the parties to it?
3. In a situation of a mandatory reassignment from one duty station to another, outline the components of a fair compensation package.
4. What is budgetary control? What is the difference between budgetary control and management control?
5. Before entering into a major contract what steps can a procurement officer take to establish the contractor's reliability and capacity to execute the contract?
6. Briefly explain the main components of a career development programme in a public sector organisation.
7. Cite five factors which you would consider in deciding whether to buy or lease equipment.
8. Identify and briefly discuss three approaches in overcoming resistance to change in administrative organizations.

9. Give three advantages of an effective communication system between managers and employees.

10. Identify and briefly discuss three major advantages of introducing electronic data processing equipment to assist in management functions.

**List of topics**

Suggested reading list: basic textbooks and periodicals in the field of administration.

The following topics should be covered:

- Administration
- Budget
- Management
- Medium-term plan
- Personnel questions
- Principles of administration and management
- Procurement
- Recruitment and training
- Human resources development
- Programme planning, budgeting, monitoring and evaluation

## FINANCE

### Essays

A. Using the following trial balance and adjustments, prepare a Balance Sheet as of 30 June 1994:

<u>Trial balance, 30 June 1994</u>	Debits (Dollars)	Credits (Dollars)
Cash	10,789	
Investments	60,000	
Pledged contributions unpaid	251,200	
Accounts receivable	1,713	
Salary advance	5,000	
Salaries	38,689	
Travel	5,058	
Miscellaneous operating expenditures	17,204	
Supplies	8,531	
Fellowship/Training expenditures	22,836	
Printing	2,700	
Unpaid expenditures (unliquidated obligations)	19,325	
Prepaid insurance	300	
Unliquidated obligations payable		19,325
Income from pledged contributions		200,000
Interest income		3,247
Public donations		10,000
Accounts payable		2,921
Fund balance 1 January 1994		207,852
	443,345	443,345

#### Adjustments:

1. \$3,000 of the \$5,000 salary advances granted has been earned by staff members during the month of June 1994.
2. The unpaid pledged contribution of the Government of Country X was paid in cash on 28 June through the UNDP office and the Resident Representative sent a cable request to have the amount reflected in the statements. The cash contribution was transferred to Chemical Bank, New York by cable.
3. The cost of insurance premium which was paid in advance on 1 January was for a one-year policy. Fifty percent of the value of the prepaid insurance had expired.
4. The United Nations received a firm pledge for a contribution of \$50,000 from the Government of Country X on 30 June 1994 through the Economic Commission for Latin America and the Caribbean which was not yet included in the trial balance.

B. As part of an overall review and study of a major computerized Electronic Data Processing (EDP)

financial system, what are the procedures which should be performed by an independent auditor to evaluate internal controls?

### Questions

1. Andrew & Associates of the United States forwarded merchandise to JMB International of Japan. Andrew billed JMB 22,000 yen for shipping charges on 16 March 1994, with payment due 15 April 1994.

Assume that on 16 March 1994, 1 yen = \$.44 and that on 15 April, 1 yen = \$.41. Prepare the journal entries on Andrew's books to record the sale to and subsequent payment from JMB International.

2. A firm needs \$85,000 cash. A local bank will make a one-year loan but requires a 15% compensatory balance (the company would ordinarily keep a zero balance since the balance maintained in the account earns no interest). If the stated rate of interest is 12%, what is the effective cost?

3. The High Company obtained a short term loan for \$80,000 from the Centrum Bank on 1 December. The loan term was 60 days with an annual interest rate of 9.5%. On the maturity date the note was renewed for a further 30 days at an interest rate of 10.25%. On this date High Company issued a check to pay the interest for the accrued interest. At the end of the 30 days High Company issued a check to pay for the final amount owing to the Bank, including the principal.

- a) Prepare entries to record the issue of the note.
- b) Assume that at the end of each month High Company recorded in its books the accrual of interest. Prepare month end entries.
- c) Show entries for the check issued on the first maturity date.
- d) Show entries for the check issued at the second maturity date.

4. Enumerate four items you would expect to find in an auditor's permanent audit file.

5. What should an auditor be looking for, or trying to ascertain, during his examination of accounts receivable at balance date?

6. An international organization has local offices located in many countries with different exchange rate systems. The local offices hold bank

accounts in local currencies but the unit of account for the entire organization is in US dollars.

a) Discuss the possible financial implications of foreign exchange differences (including a fall or rise in the local currency, and a fall or rise in the US dollar).

b) Briefly discuss the following exchange rate policies:

- (i) a managed floating exchange rate;
- (ii) a fixed exchange rate linked to a basket of currencies; and
- (iii) a fixed exchange rate backed by a currency board system.

7. A truck was purchased on 1 January 1994, for \$20,000 with no resale value. It will be depreciated for 8 years using the straight-line method. Show how the Truck account and the related Accumulated Depreciation account would appear on the balance

sheet on (a) 31 December 1994; (b) 31 December 1995.

8. Indicate four actions you would include within your audit programme to verify the accuracy of the accounts payable appearing in the balance sheet.

#### **List of topics**

Suggested reading includes basic textbooks and periodicals in the field of finance covering the following topics:

- Accounting
- Auditing
- Financial administration
- Investments
- Treasury

## ECONOMICS

### Essays

A. The debt-servicing problem of developing countries has been a matter of continuing concern since the early 1980s. What are the factors that contributed to the problem? What were the domestic effects of rising external debts? What measures have been undertaken to alleviate this problem? What kinds of policies would you recommend for alleviating the balance of payments difficulties of affected countries?

B. There have been serious disagreements in the literature on economic development as to the strategies that developing countries should follow to foster the development process. Two unsettled issues refer to: (1) the advantages of stressing agriculture or of fostering industrialization; (2) policies that take as given the current income distribution and depend on a trickle-down of the fruits of economic growth to the poorer segments of the population, as against a strategy heavily oriented towards meeting basic needs. Discuss in detail these two controversies and how the current world economic situation affects them.

C. What are the main determinants of the international division of labour? In which types of economic activity has this division of labour progressed the most and what are its global advantages? Give examples based on the experiences of one or more countries.

### Questions

1. The industrial development of developing countries is hampered by their lack of technologies. Give two major reasons with brief explanations as to why the developing countries lack access to appropriate technology.

2. Briefly explain why capital formation is considered to be an essential ingredient of economic expansion and diversification.

3. Suppose you are given a set of differential rates of inflation for a group of market-type economies. What effects might such differences have on exchange rates in the short and long run under flexible and fixed exchange rate systems?

4. Specify under which conditions a country can show a current account surplus at the same time as a trade balance deficit. Specify also the conditions under which the current and trade accounts are in deficit while the overall balance of payments is in surplus. Briefly discuss.

5. If the income elasticity of imports in a developing country is 1.75 and GNP is growing at 7 percent per annum, at what rate would you expect real imports to grow on average? Give two reasons why the growth of imports tends to out-strip the growth of GNP and exports in developing countries. Discuss three possible policies designed to curb the rate of growth of imports.

6. Discuss the economic rationale and the goodness of statistical fit of the statistically estimated relationship set out below. Would the estimated relationship suggest policy recommendations?

$$C_t = 100.27 + 0.73 Y_t - 1.25 r_{t-1} \quad \begin{matrix} \bar{R} = 0.922 \\ DW = 1.73 \\ n = 37 \end{matrix}$$

(1.06) (4.17) (-0.35)

$C_t$ : private consumption in real terms;

$Y_t$ : personal disposable income deflated by the consumer price index;

$r_t$ : Nominal interest rate minus the rate of increase in consumer prices;

$\bar{R}$ : coefficient of determination adjusted for degrees of freedom;

DW: Durbin-Watson statistic;

t: time;

n: number of observations.

In parentheses are the values of the T-statistic.

7. An investment project is expected to yield, in constant dollars, returns of \$100, \$100 and \$1,100 at the end of 1, 2 and 3 years respectively and nothing thereafter. If the investment costs \$1,000 now, would it be profitable at an expected real interest rate of 8 percent per annum? 12 percent?

8. Given a fiscal deficit, describe two ways in which such a deficit could be financed and explain whether each way would have different impacts on the economy.

9. It is said that, under fixed exchange rates, countries lose control over monetary policy, while under flexible exchange rates they have full control over this policy instrument. Explain briefly your agreement or disagreement with this statement.

10. Many countries in the world are seeking to privatise their public sector enterprises. What difficulties do you see for a developing country in such privatisation?

**List of topics**

Suggested reading includes basic textbooks and periodicals in the field of economics covering the following topics:

- Fundamental economics concepts
- National income and price indices
- Consumption, saving and investment
- Fiscal policies and taxation
- Inflation and unemployment

- Money supply and demand
- Supply and demand concepts
- Competition and monopoly
- International trade - comparative advantage
- Transnational corporations
- Tariffs quotas and free trade
- International finance
- Growth and development
- Income distribution
- Resources and environmental economics

Candidates should be able to deal with economics questions related to developing countries, economies in transition and western economies.

## INFORMATION TECHNOLOGY

### Essays

A. Enumerate and explain the 7 layers of the OSI model. Give examples where possible.

B. You are supervising an Information Technology Helpdesk in a duty station with approximately 300 PCs connected to one LAN. Your management has received reports that the performance of the Helpdesk (response rate) has decreased over the last 6 months. The staffing level of the Helpdesk has remained the same over that time.

You have been requested to provide a justification for the decrease in the response rate. List and elaborate on factors that have an impact on the performance of a helpdesk.

C. You are responsible for developing the selection criteria, which will serve as a basis for the future acquisition of software packages by a large international organization.

The organization has no clear methodology for acquiring software packages.

You were asked by your supervisor to develop a comprehensive list of criteria to be evaluated and the questions to be raised in assessing these criteria.

Prepare a list of five of these criteria. For each criterion on your list, prepare four questions, which you would include in assessing software packages.

### Questions

1. Describe the main functions performed by telecommunications control software.

2. a) Describe briefly the concept of a Virtual Private Network (VPN).

b) Compare a VPN and the traditional WAN.

c) What is a site-to-site VPN?

3. What purposes are served by thorough programme documentation?

4. The UNIX operating system was designed a long time ago. It is only recently that its use became widespread. Briefly explain why this happened.

5. Discuss briefly 3 issues related to software distribution through local area network. Give 1 example for each.

6. Explain briefly the concept of virtual memory. Explain briefly if there is any special consideration to be taken by the programmer when structuring an application to be run in a system using virtual memory.

7. Describe the terms Disaster Recovery and Business Continuity and briefly outline measures to implement these concepts in a non profit organization such as the United Nations.

8. Cite and briefly describe 5 security measures aimed to prevent unauthorized access to a network through its INTERNET connection.

### List of topics

Suggested reading includes basic textbooks and periodicals in the field of electronic data processing covering the following topics:

- Fundamentals of electronic data processing
- Computer system architecture
- Fundamentals of programming and analysis
- Operating system functions and facilities
- Basic concepts of data base management systems
- Network security
- Standard textbooks and course materials, as well as reference manuals available from hardware and software suppliers

## PUBLIC INFORMATION

### Essays

A. As an information officer you have been requested to summarize the following excerpts from a press conference of the President of the General Assembly. The press release should be prepared in journalistic style and should not exceed one page and a half (450 to 500 words).

QUESTION: A main objective of the entire United Nations - the General Assembly, the Security Council and the Secretariat - is to help maintain peace in the world. Yet, the General Assembly did not make a single move on world crisis situation. Is that a deficiency in the General Assembly which you omitted in making your suggestions?

The PRESIDENT: I do not think that it is a deficiency; it is recognition of the realities in the world. Here again, the United Nations, and in particular, the General Assembly, is a clear reflection of those realities which we face in the world today, whether we like them or not. In addition, the General Assembly, as we all know, is not a legislative parliament; it is an assembly of States, and in order to be able to discuss a problem, you require at least one delegation to take the initiative to bring something before the Assembly by moving to put a point on the agenda, by moving a resolution or by moving in a Committee to bring something to the plenary Assembly thereafter.

Those areas to which you have addressed your question are, I am sure, in the minds of many, if not all, but the fact that General Assembly did not address those questions is, in my view - I am repeating myself - first, a recognition of the realities that are out there in the world but, secondly, not a bad mark on this present General Assembly session. The Assembly is free in its decision as to what to discuss, and when on some occasions it wisely decides not to debate, that is its own prerogative.

QUESTION: Following up an earlier question, Mr. President, do you see wishfulness or duplicity in the notion that global negotiations on economics can succeed before the success of global negotiations on political unity?

The PRESIDENT: I think the two questions of political and economic solutions for the world's problems are very closely connected, and that is why we talk so often - and I am one of those who is doing that - of the necessity of generating political will in order to come to an agreement on the question of global negotiations, which, in fact, is a question of negotiating on a restructuring of the world economic system or of international economic relation. That is specified in General Assembly resolution 34/138, which is the basis for the attempts to get the global negotiations going.

There is a very close interrelationship between political problems and economic problems, at least to the extent that it requires a determination on the part of all - and I mean both North and South - to come to an agreement on the remaining issues which keep us from launching the global negotiations.

QUESTION: Your use of the expression "political will" and my use of the expression "political unity"; are these the same?

The PRESIDENT: No, they are not the same; but if I might ask you a question, I do not quite understand what you mean by political unity: of whom? Of the United Nations as a body?

QUESTION: Yes, assuming that the United Nations is really not united in any political sense.

The PRESIDENT: In that sense, I hope at least that the leaders in the countries which are interested in global negotiations are ready to go ahead with this very important exercise even without achieving political unity as you describe it. We have been striving for political unity, I think, ever since the time of the League of Nations, and certainly during the lifetime of the United Nations, and I do not dispute the observation that you have made that the United Nations, on occasions, is not entirely united.

QUESTION: Mr. President, which issue did you have in mind when you said that it was possible to avoid unnecessary confrontation and major setbacks in many fields? Do you think that it would be a good idea, for the sake of saving time, to have a debate in the Assembly on Palestine and Middle East instead of having a debate on each one of those questions?

The PRESIDENT: Well, that is a two-pronged question. First, I should like to refer again to points such as those I mentioned earlier, but also the fact that we have had a larger number, compared to previous Assemblies, of resolutions adopted by consensus. Certainly, that was the case especially with the First Committee items.

Now I have forgotten the second half of your question.

QUESTION: The question was, would you be in favour of having one debate on Palestine and the Middle East instead of one on each?

The PRESIDENT: Yes, I should indeed be in favour of grouping items. That was one proposal that the ambassadors made last year, and it was also contained in the Secretary - General's report to last year's session of the General Assembly. It was also put before the General Committee, and it never passed the General Committee. I am speaking of a grouping of items under one heading. To give one example, I think one

could very well see grouping all the items in the First Committee that deal with nuclear-free zones or zones of peace all under one heading, instead of each one being addressed separately. That would also go, in my view, for items that relate to the Middle East, in whatever fashion.

QUESTION: We all recognize how efficiently you have handled the Assembly here. You have had a great opportunity to observe the efforts that go into attacking these issues and what comes out as a result. Recently there has been public criticism of the United Nations. Do you think that criticism is fair?

The PRESIDENT: I do not know to which criticism you are referring, but let me give you a general answer that I hope will satisfy you. An Organization like the United Nations is bound to be criticized. The question here is, is it positive, constructive criticism or is it an attempt to destroy the Organization. Having pointed to that distinction, I would say that any constructive criticism should be welcome. The other kind of criticism should be dealt with, either by responding to it or by pointing to the performance of the United Nations as a whole. Again, I think I mentioned this when I came to you on my first or second day of office. I think it is unfair that public opinion - the media and the parliaments and, sometimes, Governments - when they look at the United Nations as a system, single out the General Assembly and the Security Council, because that is where the action is, that is where the drama is and that is where the story is, and very seldom report on the activities of the specialized forums, which, in my view, are doing an excellent job - most of them, if not all of them.

B. Rewrite the following cuts as a 5-minute radio item to be included in a UN radio news programme.

"HUMAN RIGHTS DAY was observed in New York on Tuesday (10 December) at a meeting of United Nations staff in honour of colleagues who have been detained or in other ways been denied their human rights. Secretary-General Perez de Cuellar reminded the staff it was against the background of the horrors of the Second World War that representatives of the nations of the world had formulated the Universal Declaration of Human Rights. The decades since then, he added, had not brought universal recognition of the inherent dignity and inalienable right of the human person.

He noted that, earlier in the day, he had attended an exhibition at United Nations headquarters depicting that most infamous attack against human life and dignity which was called Auschwitz. Mr. Perez de Cuellar told the staff that "in our own house" there had been painful reminders of human rights violations."

"The United Nations Economic and Social Council, ECOSOC, ended its second regular session of 1985 after approving a draft agreement between the United Nations and the United Nations Industrial Development Organisation, UNIDO, which was

recently converted into a specialized agency. It also recommended that the Assembly do likewise 'at the earliest opportunity.' Recognizing the coordinating role and comprehensive responsibilities of the General Assembly and the Economic and Social Council, the agreement lays out avenues of cooperation between the agency and the United Nations, and establishes UNIDO's pre-eminence in the field of upgrading the industrial systems of the developing countries."

"A resolution on help to student refugees in southern Africa expressed appreciation for the contribution of Botswana, Lesotho, Swaziland and Zambia in granting asylum, and asked the High Commissioner and Secretary-General to organize a suitable assistance programme for those refugees.

The social committee has adopted, without a vote, a resolution on the Genocide Convention, urging countries that have not already joined to do so without delay. Another resolution adopted without a vote called for the establishment of a Voluntary Fund for Indigenous Populations - to provide financial help to representatives of indigenous communities to take part in the deliberations of a working group that is devoted to their concerns."

"The Assembly's Economic Committee has adopted draft resolutions on special economic assistance programmes, and an International Volunteer Day, on the report of the Trade and Development Board, on the role of personnel in the development process, on technical cooperation among developing countries, and on coordination within the United Nations system. On special programmes of economic assistance, the draft adopted would have the Assembly ask the Secretary-General report to it in 1986 on ways and means of enhancing efficiency in the implementation of decisions taken by intergovernmental bodies."

"By another draft, the Assembly would invite Governments to observe the fifth of December as an International Volunteer Day every year, and would urge them to stress the importance of volunteer service. On technical cooperation among developing countries, the Assembly would request the organisations in the United Nations system to take action to ensure the implementation of the decisions of the High-Level Committee on the Review of Technical Cooperation among Developing Countries."

C. An observer from a non-governmental organization has written to the director of the United Nations information centre where you serve requesting that the centre issue a press statement on a major meeting organized by the nongovernmental organization in which local government officials participated. The topics covered in the meeting included human rights, the rights of the disabled, water pollution in the region and the successes of the nongovernmental organization in dealing with refugees.

Draft a letter for the director's signature in response to this request.

## Questions

1. The United Nations has a potential worldwide audience.  
What segment of the audience should be the target of documentary films?
2. What steps would you take to publicize a newly released United Nations film?
3. Why is it important for the United Nations to disseminate its own information?
4. You have been requested to make recommendations concerning the best ways to publicize a UN international year. Identify and discuss six such ways.
5. Prepare a list of six relevant questions for a radio/television interview with the Chairman of the Preparatory Committee for the Third Special Session of the United Nations General Assembly devoted to Disarmament.
6. You are working on radio, film and television productions for the United Nations. These productions are either distributed to established information outlets or used by the United Nations itself. You have to report about your audiences and about the impact your productions have on them without resorting to an outside agency. How would you go about this task and where would you get the necessary data?
7. In what ways do you think public information can help to preserve the environment?
8. Which medium of mass communication is the one most widely used in developing countries, and why?
9. You are asked to organize a two-day encounter for professional journalists from 12 Asian countries on the situation in Cambodia. The purpose of this encounter is that the media, in their home countries, could better inform the public on this issue. Outline a programme for the two-day session which would include at least five activities, the objective being that the participants would cover this issue on a regular basis through local media channels.
10. Briefly comment on "a new, more just and more effective world information and communication order." In what way would such a new order differ from the traditional situation?

## List of topics

Suggested reading includes basic textbooks and periodicals in the field of public information covering the following

topics:

- Information technology
- International communication problems
- Journalist/press work
- News production
- Photo and visual material production
- Public information materials published and disseminated by the U.N. and its agencies
- Public resolutions
- Public services provided by international organizations
- Radio work
- The work of news agencies
- TV work
- Video and film production

## SECURITY

### Essays

A. You have just taken over your new position as an Assistant Chief of Security in a country which is prone to natural disasters, including earthquakes, hurricanes, floods and mud-slides. The UN presence in the country employs about 800 staff, both nationals and expatriate. It includes a number of agencies who have offices and project sites in remote rural areas as well as main offices in the capital. Your supervisor has asked you to develop a plan to prepare for such events, with the main aim being to avoid any loss of life amongst UN staff and their families. Your plan should include contingency preparations and response in the event of a disaster actually occurring. He has asked you to provide him with a brief outline of what your plan will cover before you start on the detailed work. Requirement: prepare a note for your supervisor outlining your proposed plan.

B. You are in charge of security at a large UN compound which houses the offices of several different UN organizations. Many of these offices need to be accessible to visitors, including senior government officials, diplomats from embassies, and activists of local community groups. The compound is also entered every day by some 150 local workers who are employed in the canteens, as cleaners and maintenance staff, or by contracting firms who carry out repairs and office modifications. The Director of Administration informs you that an unacceptable quantity of office equipment and personal belongings has been disappearing from offices over the last few weeks. He says that the senior management are requesting you to take action to control the situation. You would like to meet with the senior management and propose a number of options for them to consider. Describe the options which you would present to the senior managers, giving the advantages and disadvantages of each.

C. You are a Field Security Adviser for an international agency which has a large field office in the capital of country X. Country X is experiencing unstable political conditions caused by tensions that exist between its majority political group and its minority political groups. Sometimes these tensions result in violence, however inter- group riots rarely happen suddenly or without warning. They are the product of tensions that accumulate over a period of time.

The major projects carried out by your agency in Country X are all designed to benefit the most deprived inhabitants of the worst slum areas in the capital. The projects include education and sports for street children, income generation schemes to alleviate the high

unemployment situation, soup kitchens for the destitute, and health, sanitation and clean water projects to reduce the spread of disease. These slum areas are fertile recruiting grounds for the extremist elements of all political factions (most of which are based on ethnicity, rather than ideology). Your concern is intensified because the field office employs many local personnel representing rival groups.

Although your agency has deservedly been praised for what it has achieved in these areas, there have also been occasions when perceived injustices in the distribution of assistance has led to angry demonstrations against your colleagues, and even, on two occasions in the last six months, attempts to enter and occupy the field office. These two attempts were fortunately prevented by a robust response from the local police (too robust according to some human rights activists), however the economic situation has led to delays in paying the salaries of government employees, including the police.

Tensions have risen further in anticipation of a re-run of the parliamentary elections which have been negotiated by international mediators following allegations of widespread fraud. In addition to the possibility of street violence, there have been rumours that some factions are setting up militias, recruiting from the most alienated young men in the slums, in order to carry out acts of greater violence.

Your agency senior management team has been discussing whether to continue with some, all or none of the projects in the slums over the election period, and has asked you to provide a security risk assessment to help them to make decisions.

Describe how you would go about carrying out the security risk assessment. How would you collect and assess information? What factors would you take into consideration, or give the greatest emphasis to? How would you assess the risk of certain events taking place? How would you develop recommendations for reducing the risks to staff to acceptable levels? What choices need to be made by the senior managers?

## Questions

1. What is the primary purpose of keeping statistics on the location, nature and frequency of security/safety incidents?
2. Officer conduct at the scene of a demonstration or crowd disturbance is often an important factor in restoring order. List three of the most important rules that you would establish for security officers to deal with a disturbance of this nature.
3. List the advantages and disadvantages of using electronic monitoring devices to secure the perimeter of premises.
4. As a general rule, when a subordinate makes an error he or she should be quickly and publicly corrected so that others can learn from the mistake.
  - a. Do you agree with this approach? If so, explain why.
  - b. If not, explain how you would handle the situation.
5. Assuming a 40 hour work week, 8 hour shifts, 6 official holidays, 5 days of sick leave, 10 days of annual leave, and an average annual salary of \$13,000:
  - a. How many security officers would be required to establish and maintain a permanent 24-hour a day guard post?
  - b. What would be the salary cost of establishing such a post?
6. There has been an accident with a gas cooker in the office canteen kitchen and a number of kitchen staff have been injured, two apparently seriously. You arrive at the canteen to find scenes of panic and chaos, with nobody in charge, some hysterical screaming, and some materials still on fire. How would you handle the situation? What are your priorities?
7. . You are in a duty station where the local media has recently reported a number of assaults, both sexual and robbery, against women returning from work. The staff welfare officer asks you to give a presentation to female colleagues on what they can do to avoid becoming victims. Outline your talk.
8. List 10 priority areas that should be covered in training a new security officer. Briefly describe which training method should be used for each area listed.

## List of topics

For the preparation of the specialized part of the examination, candidates are encouraged to study general literature and periodicals on:

- Security
- Law enforcement
- Safety
- Fire fighting and fire prevention

It is also advisable for candidates to possess a general knowledge of activities and programmes carried out by UN agencies and NGOs, particularly in the field.

## **SOCIAL AFFAIRS**

### **Essays**

A. Limiting the role of government has been a recent trend common to many economies. Discuss the causes and modalities of this trend and assess its significance in resolving developmental problems of developing countries.

B. Discuss major social development issues that are currently attracting significant notice from many governments and the international community.

C. Incomes and material living conditions in developed countries have improved greatly since World War II; simultaneously, the countries' indicators of social malaise such as divorces, substance abuses and suicides have also risen. Discuss.

### **Questions**

1. In recent years, there have been significant changes in migration. Briefly discuss the changes in the pattern of population movements.

2. Outline major policy options available to governments of developing countries to alter or modify the size distribution of their national income. Give three specific examples.

3. Modern communications and information technologies are becoming increasingly accessible. This modernization will accelerate redeployment of human resources and the consequent social changes. Briefly discuss any changes you have already observed and those you anticipate for the future.

4. Growing unemployment among young people is a significant concern in developing countries. Briefly discuss three major policy responses by these governments to improve this condition.

5. What are the principal characteristics of poverty groups? What do these characteristics reveal about the feasibility of a poverty focused development strategy?

6. How can governments of developing countries improve government spending on health in their countries? Give three examples.

7. List and briefly explain the objectives of three events that constitute "milestones" in the United Nations activities in the area of the advancement of women.

8. In some developing countries national food selfsufficiency will not necessarily eliminate hunger and malnutrition. Suggest three actions to reduce food insecurity.

### **List of topics**

Suggested reading includes basic textbooks and periodicals in the field of social affairs covering the following topics:

- Aging
- Child labour
- Community development
- Crime
- Drug abuse
- Education
- Family
- Gender equality
- Health
- HIV/AIDS
- Housing
- Hunger and malnutrition
- Human resources development
- Indigenous people
- Migration
- Persons with disabilities
- Population/demography
- Poverty reduction
- Refugees
- Research methods
- Role of NGOs
- Rural development
- Social development
- Social integration
- Social protection
- Statistics
- Unemployment
- Urbanization
- Women
- Youth

### **List of documents**

- Declaration on Social Progress and Development, United Nations
- Human development reports, UNDP
- International Covenant on Economic, Social and Cultural Rights, United Nations
- Major reports of FAO, ILO, UNAIDS, UNESCO, UNHCR, the World Bank, WHO, etc. Visit their website
- Millennium Declaration
- Reports of major UN conferences and summits such as the World Summit for Social Development, 24<sup>th</sup> Special session of the GA, 2000; Fourth World Conference on Women and 23rd Special session of the GA 2000; World Summit on Sustainable Development, 2002; International Conference on Financing for Development, 2002, etc.
- Reports of the Secretary-General on the Implementaion of the UN Millennium Declaration, A/57/270, A/58/...
- Reports on the World Social Situation, 2001, 2003, United Nations
- Road map towards the implementaion of the UN Millennium Declaration, A/56/326
- The State of the World's Children, UNICEF
- UNRISD (United Nations Research Institute for Social Development) publications, www.unrisd.org
- World Population Plan of Action, United Nations

## STATISTICS

### Essays

A. The computer manufacturing industry in a country produces basically two classes of computers. An annual price survey of the industry includes two models of each class (see table below). *Model 1a* was discontinued after 2002, and it was replaced in the survey sample by a slightly upgraded version, called *Model 1a+*. The results of the survey from 2000 to 2002 are as follows:

<i>Price (US\$) of surveyed computer models</i>			
	2000	2001	2002
<b>Computers of class 1</b>			
Model 1a	1,500	1,450	
Model 1a+			1,350
Model 1b	1,200	1,180	1,180
<b>Computers of class 2</b>			
Model 2a	425	400	410
Model 2b	540	550	550
 <i>Estimated number of computers sold (in thousands)</i>			
	2000	2001	2002
<b>Computers of class 1</b>			
Model 1a	20	35	
Model 1a+			40
Model 1b	10	15	15
<b>Computers of class 2</b>			
Model 2a	360	350	370
Model 2b	140	140	130

<i>Characteristics of computer models of class 1 included in the survey</i>			
	Model 1a	Model 1a+	Model 1b
Hard Disk	40GB	80GB	80GB
Mflops*	201	201	185

\* Millions of floating point operations per second

- 1) The chained Laspeyres and Paasche price index number formula are (where  $p$  stands for price and  $q$  for quantity):

$$P_{t-1,t}(q_{t-1}) = \frac{\sum p_t q_{t-1}}{\sum p_{t-1} q_{t-1}} \quad \text{Laspeyres} \qquad P_{t-1,t}(q_t) = \frac{\sum p_t q_t}{\sum p_{t-1} q_t} \quad \text{Paasche}$$

- (a) Calculate the chained Laspeyres and Paasche price indices for each computer class (using always the previous period as base year).

- (b) Explain assumptions you make to obtain your results, especially regarding the replacement of *Model 1a* with *Model 1a+*.
- 2) The national statistical agency also collects information on production of each computer class on an ongoing basis:

<i>Production shares</i>			
	2000	2001	2002
Computers of class 1	0.15	0.25	0.23
Computers of class 2	0.85	0.75	0.77

- (a) Obtain the aggregate chained Laspeyres and Paasche price indices for computers (i.e. general price indices for the whole computer industry, setting the previous period as the base year for the current price index).
- (b) According to each of the two chained index formulas, how much has the general level of prices for computers increased in 2002 as compared to 2000?
- (c) How can any difference between the results obtained using Laspeyres and Paasche formulas be explained?
- 3) Suppose you have to interpret a time series of production or sales numbers of computers. Why would a corresponding time series of price indexes be useful? Please explain.

B. You have been asked to construct a questionnaire for a survey on housing. The survey will be administered door-to-door by interviewers. Your colleagues remind you that respondents often fail to understand the questions the researcher is trying to ask.

1) What are five common causes of this failure to communicate to the respondent (limit your answer to five causes)? What can you do to avoid making these mistakes?

In designing the sample for the housing survey you are asked to make sure it is representative of the population. One of your colleagues suggests that you use clusters in your sample design whilst another suggests that you should stratify your sample.

2) What effect does clustering and stratification for this sample have on, for instance, the standard error? Contrast these methods of sampling with simple random sampling.

### Questions

1. Suppose

$$f_{Y|X}(y|x) = \begin{cases} 1 & x < y < x + 1 \\ 0 & \text{otherwise} \end{cases}$$

and that  $X$  has the uniform  $(0,1)$  distribution

- (a) Find  $E(Y)$
- (b) Find  $f_{X|Y}(x|y)$
- (c) Find  $P(X + Y < 1)$
2. Define the mean, mode and median and show by diagram how they are normally related in a distribution which is skewed to the right.
3. A bowl contains four lottery tickets with the numbers 111, 221, 212, and 122. One ticket is drawn at random from the bowl and  $A_i$  is the event that 2 is in the  $i$ th place,  $i = 1, 2, 3$ .

Determine whether  $A_1$ ,  $A_2$ , and  $A_3$  are independent.

4. Describe two ways of measuring growth rates of time series and comment on the advantages and disadvantages of each.
5. Distinguish clearly between systematic errors and random errors in a sample inquiry.
6. In a college class, there are 80 men and 40 women. There are 36 smokers and 84 non-smokers. What is the likelihood that any student selected at random is a male smoker under the following conditions:
  - a. If the percentage of smokers among men is the same as the percentage of smokers among women (i.e. no relationship between sex and smoking)?
  - b. If the percentage of smokers among men is twice the percentage of smokers among women (i.e. men are twice as likely to smoke as women)?
7. A national service requires all applicants to undergo a drug screening examination. In a batch of 25 applicants one fails the test. The applicant claims never to have used any drugs. It is known that the equipment used in the test has been shown empirically to be able to detect the presence of drugs 99% of the time when the drugs are present. The manufacturer also admits that 5% of the time the equipment detects drugs even when they are not there. It is also known that at least 90% of those who enlisted in the armed forces of the country have not used drugs. What, if anything, can be said about the claims of the applicant?
8. The table below shows the number of “excellent” students (receiving A scores in their exam) and the number of “mediocre” students (receiving C scores in their exam) according to three different teachers, Mr. X, Mr. Y and Mr. Z, that have been asked to mark the same exam.

Test the hypothesis that the number of “mediocre” students is the same for each teacher (Hint: test the hypothesis that being “excellent” or “mediocre” is independent by the teacher who marked the exam).

	Mr. X	Mr. Y	Mr. Z	Total
Excellent (A)	50	47	56	153
Mediocre (C)	5	14	8	27
Total	55	61	64	180

9. Of the 50 people on a bus,  $1/5$  opposes the smoking ban on the bus. If 15 of these passengers are selected at random, without replacement, (a) what is the probability that exactly 5 of them oppose the smoking ban and (b) what is the expected number of passengers in the sample that opposes the smoking ban?

### List of topics

Suggested reading includes basic textbooks or manuals in the field of statistics covering the following topics:

- Probability Theory
- Descriptive Statistics
- Inferential Statistics
- Demographic and Social Statistics
- Economic Statistics

## EXAMINATION SAMPLES

### GENERAL PAPER

#### Summary

Summarize the following report in your own words. The report should be reduced to approximately one third of its original length; the summary should have between 200 and 300 words. Failure to meet these guidelines will result in point loss.

#### Text

Ecology and economics should push in the same direction. After all, the “eco” part of each word derives from the Greek word for “home”, and the protagonists of both claim to have humanity's welfare as their goal. Yet environmentalists and economists are often at loggerheads. For economists, the world seems to be getting better. For many environmentalists, it seems to be getting worse. These environmentalists have developed a sort of “litany” of three big environmental fears: natural resources are running out; the population is ever growing, leaving less and less to eat and the planet's air and water are becoming ever more polluted. Human activity is thus defiling the earth, and humanity may end up killing itself in the process. The trouble is, the evidence does not back up this litany. The early environmental movement worried that the mineral resources on which modern industry depends would run out. Clearly, there must be some limit to the amount of fossil fuels and metal ores that can be extracted from the earth: the planet, after all, has a finite mass. But that limit is far greater than many environmentalists would have people believe. Reserves of natural resources have to be located, a process that costs money. That, not natural scarcity, is the main limit on their availability. However, known reserves of all fossil fuels, and of most commercially important metals, are now larger than were believed to be. In the case of oil, for example, reserves that could be extracted at reasonably competitive prices would keep the world economy running for about 150 years at present consumption rates. Add to that the fact that the price of solar energy has fallen by half in every decade for the past 30 years, and appears likely to continue to do so into the future, and energy shortages do not look like a serious threat either to the economy or to the environment. The population explosion is also turning out to be a bugaboo. As far back as the end of the 18<sup>th</sup> Century Thomas Malthus claimed that, if unchecked, human population would expand exponentially, while food production could increase only linearly, by bringing new land into cultivation. He was wrong. Population growth has turned out to have an internal check: as people grow richer and healthier, they have smaller families. Indeed, the growth rate of the human population reached its peak, of more than 2% a year, in the early 1960s. The rate of increase has been declining ever since. It is now 1.26%, and is expected to fall to 0.46% in 2050. The United Nations estimates that most of the world's population growth will be over by 2100, with the population stabilising at just below 11 billion. Granted, the threat of pollution is real, but exaggerated. Many analyses show that air pollution diminishes when a society becomes rich enough to be able to afford to be concerned about the environment. For London, the city for which the best data are available, air pollution peaked around 1890. Today, the air is cleaner than it has been since 1585. There is good reason to believe that this general picture holds true for all developed countries. And, although air pollution is increasing in many developing countries, they are merely replicating the development of the industrialized countries. When they grow sufficiently rich they, too, will start to reduce their air pollution. All this contradicts the litany. Yet opinion polls suggest that many people, in the rich world, at least, nurture the belief that environmental standards are declining. Scientific funding goes mainly to areas with many problems. That may be wise policy, but it will also create an impression that many more potential problems exist than is the case. The attitude of the media is also a factor in the distortion. People are clearly more curious about bad news than good. Newspapers and broadcasters are there to provide what the public wants. That, however, can lead to significant distortions of perception. To replace the litany with facts is crucial if people want to make the best possible decisions for the future.