

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (MEDICAL ADMINISTRATION) PART I EXAMINATION
JANUARY 2012

Date : 2nd January 2012

Time : 1.00 p.m - 4.00 p.m

PAPER I

Answer question one (01) and three other (03) questions.
Answer each question in a separate answer book.

1. You have been requested to carry out a research project to ascertain the feasibility of providing halfway homes for the care of the elderly in a district.
 - 1.1. Name the research design most appropriate to achieving this objective. (05 marks)
 - 1.2. Discuss what factors you will take into consideration in formulating the project proposal. (30 marks)
 - 1.3. What will be your general and specific objectives ? (15 marks)
 - 1.4. How will you plan to evaluate the success or failure of the project ? Discuss. (30 marks)

2. Discuss advantages and disadvantages of using
 - 2.1. Focus group discussions. (10 marks)
 - 2.2. Key informant interviews. (10 marks)
 - 2.3. Observation techniques for qualitative data. (10 marks)
 - 2.4. Self administered questionnaires. (10 marks)

3. You have been appointed to an Expert Committee of Health Care Managers in Province to identify the health research priorities in the province. Outline how you will set about in identifying the health research priorities in the province. (40 marks)
4. Write notes on the usefulness of the following for a research project.
- 4.1. Cost effectiveness of an intervention. (10 marks)
 - 4.2. Burden of disease estimates. (10 marks)
 - 4.3. Rapid appraisal techniques or soundings. (10 marks)
 - 4.4. SWOT analysis. (10 marks)
- 5.
- 5.1. Explain the term *Informed Consent* as applied to research ethics and how it is documented. (10 marks)
 - 5.2. Discuss the essential elements that should be mentioned in the Information sheet given to potential participants of a research project. (20 marks)
 - 5.3. *A local Ministry of Health has requested a prevalence / behavioral surveillance study for sexually transmitted infection (STI) among commercial sex workers. Participants in this study will be tested for 3 common STIs and participate in an interview. Participants will receive a card with a number linking them to their blood sample. Women who donate blood will have the option of presenting their card to get the results of the STI tests. Those with positive results for any of the 3 infections will be offered free treatment. In addition, all participants will receive a small gift in return for their participation.*

The target population consists of brothel-based sex workers who are strictly controlled by the brothel managers. Prior to initiating the research, the researcher meets with the brothel manger to ask permission to conduct the study. During the meeting, the manager states that all of the women working in the brothel will participate in the study.

In the example given above, describe how the researcher can ensure that informed consent is given freely by all participants, and if a woman chooses not to participate, what can be done to protect her from retaliation by the manager. If you believe that the women will not be able to give voluntary informed consent, what alternatives could you suggest to the Ministry of Health ? (10 marks)

6.

6.1. Why is it essential to undertake a literature review for carrying out your research project at project formulation stage ? Discuss. (10 marks)

6.2. Discuss methods and means you will use to carry out a literature review. (10 marks)

6.3. You have been asked by a medical journal to referee a paper entitled "*Effectiveness of a hospital-wide programme to improve compliance with hand hygiene*". Explain the points you will consider before recommending whether or not the paper should be accepted for publication. (20 marks)

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MD (MEDICAL ADMINISTRATION) PART I EXAMINATION
JANUARY 2012

Date : 3rd January 2012

Time : 9.00 a.m - 12.00 noon

PAPER II

Answer question one (01) and three other questions.
Answer each question in a separate answer book.

1.

- 1.1. Explain what strategic Human Resource Management is and how it relates to the strategic management process. (20 marks)
- 1.2. Discuss economic order quantity (EOQ) application for improving supply chain management (SCM) in a healthcare organization. (20 marks)
- 1.3. Discuss the challenges and barriers in implementing a Continuous Quality Improvement Programme in a District General Hospital in relation to different levels of management. (20 marks)
- 1.4. Critique the following statement
“ Private sector hospitals could be a useful asset to the state sector”.
(20 marks)

2.

- (A) An experiment was conducted to study the effect of tranquilizing drugs and age in case of mental patients. Eighteen patients were selected from six age groups of (25 – 29) to (50 – 54) with three patients from each age group. Three drugs were randomly assigned to the three patients from the number of hours of sleep each patient had after the administration of the drug. For this experiment it is assumed that no interaction exists between age and drugs.

Summary of results from the statistical analysis as extracted from the computer print out are as follows:

<u>Age group means</u>		<u>Drug means</u>	
<u>Age group</u>	<u>Mean</u>	<u>Drug</u>	<u>Mean</u>
(25 – 29)	11.67	A	11.83
(30 – 34)	11.33	B	8.83
(35 – 39)	9.67	C	10.00
(40 - 44)	10.33		
(45 – 49)	8.67		
(50 – 54)	9.67		
Raw sum of squares	=	1956	
Correction factor	=	1880.89	
Age group sum of squares	=	19.11	
Drug sum of squares	=	27.44	
Table F $_{0.05(5,10)}$	=	3.33	Table F $_{0.05(2,10)} = 4.10$

HSD values for comparison of means

- (i) For age groups, HSD value = 4.7907
(ii) For drugs, HSD value = 2.6769

- 2.1. Write down the statistical model underlining the above experimental design and interpret the entities appearing in the model. (02 marks)
- 2.2. Construct the ANOVA table using the above data. (04 marks)
- 2.3. Test whether all age groups are identical or not, if not, which age groups differ (use 0.05 level of significance for all testing) (08 marks)
- 2.4. Test whether all drugs are identical or not, if not, which drugs differ ? (use 0.05 level of significance for all testing) (08 marks)
- 2.5. Interpret your results and comment. (02 marks)
- (B) Explain the process “ simple random sampling” and “ Stratified random sampling” used to select a sample for a survey citing a suitable practical example from medical sciences in each case. (16 marks)

3. *Mrs. K, a 68-year-old former nurse, had been making a successful recovery from a hysterectomy at a Maternity Hospital. When she was given an intravenous dose of Augmentin, within 30 seconds Mrs K developed marked angioedema of her face, and marked difficulty in breathing. Unfortunately resuscitation attempts failed and she died.*

One year before she had developed swelling of her face and mouth after being given penicillin but had survived. As a result, the warning 'severe penicillin allergy' was written on the front of her drug chart.

The Medical Officer who had written the prescription had not seen the warning because the drug chart of Mrs K's BHT had been folded back. The Nursing Officer too had administered the drug since it was prescribed by a Medical Officer.

One important problem that had contributed to this tragedy was that there was no clear label on the outside of the Augmentin package stating that it was a penicillin-based antibiotic.

In the case study given above

- 3.1. Identify the active and latent failure issues for the case using a Root Cause method. (20 marks)
- 3.2. What measures should be adopted in future to avoid such adverse events in this hospital. (10 marks)
- 3.3. How would you implement such solutions to avoid adverse events involving all categories of staff. (10 marks)

4. The Human Resource Unit of a Department / Ministry of Health intends to adopt Human Resource (HR) performance indicators to analyse trends in hospital performance and also, compare between hospitals. Discuss the strengths and limitations that may apply when the following performance indicators are applied to the Sri Lanka health system.
- 4.1. Hospital absenteeism rate. (15 marks)
- 4.2. Percentage of staff who have received capacity building (in-service training) in the past year. (15 marks)
- 4.3. Major : minor operation ratio. (10 marks)
5. As the medical administrator of a district general hospital describe how you would reduce the mortality due to dengue in your hospital within next six months. (40 marks)
- 6.
- 6.1. Briefly explain three indicators that measure economic development in a country by incorporating health improvements as alternative measures for per capita income. (20 marks)
- 6.2. Explain the role of health services in economic development with special reference to Sri Lanka.. (20 marks)