

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (MEDICAL ADMINISTRATION) PART I EXAMINATION –
JANUARY 2017

Date :- 9th January 2017

Time :- 1.00 p.m. – 4.00 p.m.

PAPER I

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

1.

1.1. In 36 patients with vitamin K deficiency the mean plasma prothrombin level was 18.5 mg/100 ml and the standard deviation was 4 mg/100 ml.

1.1.1. Calculate the standard error of the mean plasma prothrombin level. (05 marks)

1.1.2. Construct a 95% confidence interval for the mean plasma prothrombin level of all such patients. (10 marks)

1.2. Critique the following statements:

1.2.1. One -tailed test is more powerful than the two-tailed test. (05 marks)

1.2.2. Paired t-test is more powerful than the pooled t-test. (05 marks)

1.2.3. Power of a statistical test is equal to 1- β error. (05 marks)

1.2.4. Mean is the best measure of central tendency. (05 marks)

Contd..../2-

1.3.

1.3.1. Describe the properties of the normal curve. (05 marks)

1.3.2. Height of a large population of men follow a normal distribution with a mean of 172 cm and a standard deviation of 6.5 cm. Calculate the cut off point (height) for the tallest 2.3% of the population. (10 marks)

1.4. An investigator wishes to study the relationship between the occurrence of bladder cancer and excessive consumption of frozen yoghurt. He selected 550 cases of bladder cancer from the cancer hospital and 550 age and sex matched controlled from patients attending the urology clinic for reasons other than bladder cancer. A history of excessive consumption of frozen yoghurt was given by 350 cancer cases and 150 controls.

1.4.1. Display the data in a 2 x 2 table. (05 marks)

1.4.2. Calculate the risk estimate associated with the excessive consumption of frozen yoghurt. (10 marks)

1.4.3. Discuss the issues related to the selection of controls in this study. (15 marks)

2.

2.1. Describe the economic aspects of Human Resource planning for health. (20 marks)

2.2. Discuss the difference between Economic Growth and Economic Development. (20 marks)

3.

3.1. Explain with examples criteria that are used to judge cause effect relationship. (20 marks)

3.2. Describe confounding in epidemiological studies giving examples. (20 marks)

4. Lowering of infant mortality rate is needed to achieve Sustainable Development Goals (SDG). Three maternity super centres which provide comprehensive maternity and neonatal care has been planned to achieve this goal.
- 4.1. Outline the factors to be considered in the feasibility assessment of establishing these super centres. (25 marks)
- 4.2. Draw a log frame matrix for monitoring and evaluation of this project. (15 marks)
- 5.
- 5.1. What do you mean by medical negligence? (05 marks)
- 5.2. Explain what steps you would take as a Hospital Administrator to minimize medical negligence and litigation. (15 marks)
- 5.3. A 5 year old child admitted to an Accident & Emergency unit of a tertiary care hospital following a road traffic accident needs an urgent blood transfusion. Parents are refusing blood transfusion due to their religious belief. When such ethical dilemma occurs what ethical principles come in to play and how do you manage this situation? Justify your answer. (20 marks)
6. It was observed that in a district general hospital more than 30% of laboratory investigations requested are sent to private laboratories at the expense of patients.

Describe a study to identify the factors that contribute to above situation. (40 marks)

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MD (MEDICAL ADMINISTRATION) PART I EXAMINATION –
JANUARY 2017

Date :- 10th January 2017

Time :- 9.00 a.m. – 12.00 noon

PAPER II

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

PAPER II

1.

- 1.1. After 20 years of successful private practice in a Colombo suburb, Dr. Perera decided to set up his own private hospital. Dr. Perera comes from a family of doctors and Dr Perera's uncle worked at the General Hospital, Colombo and did some part-time practice as well. As early 2005, Dr. Perera began exploring various avenues for him to start a private clinic with expanded facilities. It took however some time for him to find a suitable partner who would invest in his venture. In 2008, Perera was successful in finding a partner who is an importer of medical equipment and supplies who agreed to invest Rs.25 million in a joint venture.

By 2009, Perera had established the new company; Gold Star Hospitals Ltd. Phase I of the project which would have, only comprehensive clinical services such as diagnostic, testing and prescriptive. Phase II would enable patient care services with 180 beds. By year 2011, Gold Star Hospitals Ltd. had built a building complex with a construction value of Rs.19 million, and had purchased furniture, equipment and medical equipment including X-ray and Cardiology to the value of Rs. 36 million

Diagnostic services are provided by two doctors including Perera. The other doctor is Dr (Mrs.) Kalyani working as an additional doctor and her competencies and ways of doing things fit well with Dr. Perera. The clinic attracted more patients during hours of Dr. Perera. Arrangements had been made to obtain channeled services from a cadre of doctors from government and other hospitals on a daily basis. However, Dr. Perera saw, that the number of patients patronizing his new hospital was not rapidly increasing. He often reasoned out that the distance to Colombo center would have been contributing to frequent cancellation of channeling arrangements.

At the end of the first two years of operation, Dr. Perera saw that his business was not earning enough to break-even. Bank interest charges on the loans along amounted to Rs. 180,000 per month. Salaries for six nursing and support staff, 3 office assistants, five technicians, and two pharmacists took away another Rs. 146,000 per month. He must increase his revenue in a sizeable way if he were to make any surplus and keep his partner happy and involved. He is advised that he must go for phase II and complete the hospital project in order to attract more patients and reach the profitable level of operations. To the contrary, Dr. Perera has already begun to feel that a hospital would not attract enough patients to help survive the project.

- 1.1.1. Outline by way of a diagram the key elements in the strategic management process you would use in the above case. (10 marks)
- 1.1.2. Discuss the tools that you would use in analysing the environment in this case, indicating the specific areas in the environment and related elements that you would consider in applying each tool. (30 marks)
- 1.2. Discuss the difference between Clinical Audit and research.(10 marks)
- 1.3. Design a Clinical Audit for the Medical Clinic in a District General Hospital. (30 marks)

2.

- 2.1. What do you understand by “a results framework”? (05 marks)
- 2.2. What are the advantages of using a results framework than the traditional methods for monitoring and evaluation? (15 marks)
- 2.3. Outline a results framework to illustrate how you are going to monitor and evaluate a NCD Prevention and Control Programme in a district. (20 marks)

3. Critique the statement that “Establishing paying wards together with the private sector in the state operate hospital is not a feasible”. (40 marks)

4.

- 4.1. Define key performance indicators? (05 marks)
- 4.2. Critically discuss the suitability of the indicator given below considering the current behaviour of the population in Sri Lanka. (35 marks)

Indicator	Definition	Baseline	2015 value
Unmet need for family planning	No. of registered eligible families who are not expecting a child in next 2 years but not practicing any family planning method among 100 eligible families under care	7.5 (2011)	6.6

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- 5.
- 5.1. Differentiate 'Equipment availability' and 'Equipment utilization'.
(05 marks)
 - 5.2. Describe the role of Technical Evaluation committee (TEC) in relation to procurement of medical equipment.
(15 marks)
 - 5.3. Discuss the difference between 'inbound logistics' and 'out bound logistics' in relation to supply chain management of in relation to drug supply process of Medical Supplies Division (MSD).
(20 marks)
- 6.
- 6.1. How do you differentiate between human resource management and strategic human resources management?
(05 marks)
 - 6.2. Describe the functions and objectives of the human resource management considering the changing environment.
(15 marks)
 - 6.3. Discuss how you would develop a Human Resource Management plan for Medical Officers and Nursing Officers in a teaching hospital.
(20 marks)