

Date of Examination



No of Questions	03
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GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY
SELECTION TEST FOR BACHELOR OF MEDICINE AND BACHELOR OF SURGERY
(MBBS) DEGREE PROGRAMME
INTAKE - 41
(LOCAL CATEGORY ON FEE LEVYING BASIS)
ENGLISH

Instructions:

Answer all questions.

Duration: 01 hour

1. Fill in the blanks with the words given below. (10 marks)

achieved, recently, promise, near, ensure, over, basic, medicine, clinically, principles

The history of medical robots, though short, has required much creativity. Since their launch just 1) 20 years ago, the robotic systems that have been used 2)have evolved substantially. The 3) rules and approaches to the use of robots in 4) had to be invented. For example, industrial robots were not intended for use 5) people, so the whole strategy to 6) the safety of patients and medical personnel had to be worked out from first 7) As in the early days of computing, much of the early 8) of medical robotics failed to materialize; only 9) have more reliable, better targeted clinical implementations 10) medical and commercial success.

2. Read the following passage and answer the questions below. (20 Marks)

Asthma is becoming a more prevalent disease since the early 1990s. From 1982 to 1992, the rate of asthma jumped from 34.7 to 49.4 per thousand. The prevalence of asthma in the USA is around 8%. There also has been some mixed trends around the world where different countries have either had increasing cases or have been stagnant.

In children, asthma is presented predominantly in males until the age of 20, where the disease equally prevalent. Differences in childhood can be due to atopy, or because boys have a reduced airway size compared to girls. There is a family history component of asthma, as well. However, the genes responsible for inheriting asthma remain unidentified. There are mechanisms of the phenotype of asthma that has a strong correlation of being inherited, but the mechanism is more complex, as asthma does not follow a Mendelian pattern.

Asthma is most likely transmitted by multiple genes, with some variation of locus heterogeneity and polygenic inheritance leading to asthma expression being multifaceted. Atopy or IgE antibodies attack specific antigens or pollutants, which can contribute to the disease. Research has shown that asthma was closely related to the total IgE serum level. Enhanced IgE response to environmental factors such as house dust mites, animal allergens, mold, farm animals, have contributed to sensitize asthma exacerbating its symptoms and attributing to increased airway reactivity. The reason being is that there is increased exposure to these allergens, but less data is available on the causality. Air pollution and the causation of asthma are also less clear; however, there is a relationship with smoking and the increased risk of asthma. Interestingly enough, obesity showed a positive linear relationship between asthma and increased BMI. More research needs to be done to have a clearer picture of the multifactorial disease.

From Pathophysiology of Asthma (Sinyo and Perez, 2023)

1. According to paragraph 1, which term best describes the trends observed in different countries regarding asthma cases?
 - a) uniform
 - b) consistent
 - c) varied
 - d) stable

2. What is the complexity associated with the inheritance of asthma according to the passage?
 - a) The genes responsible for asthma inheritance have been identified but are difficult to study.
 - b) Asthma follows a Mendelian pattern of inheritance, making it easy to predict its inheritance.
 - c) The phenotype of asthma has a weak correlation with inheritance.

- d) Asthma inheritance involves mechanisms that are more complex than a straightforward Mendelian pattern.
3. What is suggested as a possible reason for the predominance of asthma in males in childhood?
- a) Differences in the artery size
 - b) Family history of asthma
 - c) Identified genetic factors
 - d) Mendelian inheritance pattern
4. What is the relationship between asthma and IgE antibodies?
- a) IgE antibodies directly cause asthma symptoms.
 - b) The production of IgE antibodies causes asthma exacerbation.
 - c) There is a correlation between IgE levels and asthma.
 - d) IgE antibodies have no impact on asthma development.
5. According to paragraph 3, which statement accurately reflects the relationship between enhanced IgE response and asthma exacerbation?
- a) Enhanced IgE response is the primary cause of asthma exacerbation.
 - b) Asthma exacerbation leads to enhanced IgE response.
 - c) The link between an exacerbation of asthma and an elevated IgE response is complex.
 - d) Asthma exacerbation has no connection to enhanced IgE response.

