Student should carefully read the context of **"A system to support the clinical management of patients suffering from mental illness"** to answer questions in the test.

The patient information system to support mental health care (the Mentcare system) is a medical information system that maintains information about patients suffering from mental health problems and the treatments that they have received. The Mentcare system has to provide both management and clinical information:

1. Management information that allows health service managers to assess performance against local and government targets and to monitor the costs of treatment.
2. Clinical information on medical history, diagnoses and treatments

The system is used to record information about patients (name, address, age, next of kin, etc.), consultations (date, doctor seen, subjective impressions of the patient, etc.), conditions and treatments. Reports are generated at regular intervals for medical staff and health authority managers. Typically, reports for medical staff focus on information about individual patients whereas management reports are anonymized and are concerned with conditions, costs of treatment, etc.

The key features of the system are:

1. *Individual care management* Clinicians can create records for patients, edit the information in the system, view patient history, etc. The system supports data summaries so that doctors who have not previously met a patient can quickly learn about the key problems and treatments that have been prescribed.

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2. *Patient monitoring* The system regularly monitors the records of patients that are involved in treatment and issues warnings if possible problems are detected. Therefore, if a patient has not seen a doctor for some time, a warning may be issued. One of the most important elements of the monitoring system is to keep track of patients who have been sectioned (detained in a secure hospital without their consent) and to ensure that the legally required checks are carried out at the right time.

3. *Managing involuntary detention* In a minority of cases, patients may be a danger to themselves or to other people. They may regularly change address and may be homeless on a long-term or short-term basis. Where patients are dangerous, they may need to be 'sectioned' – confined to a secure hospital for treatment and observation.

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4. *Administrative reporting* The system generates monthly management reports showing the number of patients treated at each clinic, the number of patients who have

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4. *Administrative reporting* The system generates monthly management reports showing the number of patients treated at each clinic, the number of patients who have entered and left the care system, number of patients sectioned, the drugs prescribed and their costs, etc.

The overall design of the system has to take into account both safety and privacy concerns.

1. The safety implications stem from the fact that some mental illnesses cause patients to become suicidal or a danger to other people. Wherever possible, the system should warn medical staff about potentially suicidal or dangerous patients. Other safety issues concern checking of drug dosage and appropriate medication. The system must be available when needed otherwise safety may be compromised and it may be impossible to prescribe the correct medication to patients.

2. As in all medical systems, privacy is a critical system requirement. It is essential that patient information is confidential and is never disclosed to anyone apart from authorized medical staff and the patient themselves. Hospital managers should not have access to individual patient information.

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1. *Clinical staff.* Clinical staff interact directly with the system, looking up and modifying patient information. They are particularly concerned with maintaining a history of consultations and recording the treatment and medication prescribed to patients.

2. *Administrators.* Administrators interact directly with the system and use it in conjunction with a generic appointments system to record information about patient appointments. They need to record when appointments were made, the appointment date and whether or not patients attended appointments. Administrators are also responsible for generating reports for clinic management.

3. *System administrators and records managers* The medical records office is responsible for ensuring the overall integrity and security of the data in the system. They are also responsible for integrating the system with other patient record systems, sharing information when required. System administrators are responsible for ensuring the security and integrity of the system. Medical records managers are responsible for

ensuring that the system conforms to legal requirements on personal information

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ensuring that the system conforms to legal requirements on personal information systems.

4. *Health service management.* Health service management do not interact with the system directly. Rather, they make use of reports covering consultations, diagnoses and treatments. These creation of these reports is initiated by medical records staff. The reports are generated automatically by the system and do not contain personal patient information. Managers do not have access to the clinical features of the system or to individual patient records.

The Mentcare system will be used by a range of professional and administrative staff including senior doctors and consultants. For acceptance of the system by these staff, it is essential that close attention is paid to system usability so that users can learn to use the system quickly; can use the system without undue effort during a patient consultation and make as few errors as possible when using the system.

To start with, the team working on this project consists of 14 developers, 4 QAs, and 1 BA and 1 Team Leader. The Information Technology department of the medical center could support the development team to understanding the terms of this business but rarely.

QUESTIONS:

1. List out 6 functional requirements (Health service management: 3; *System administrators and records managers*: 3) and 2 non-functional requirements of the system. (**2 points**)
2. Write 2 user stories for the Administrators, Health service management. (**2 points**)

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1. List out 6 functional requirements (Health service management: 3; *System administrators and records managers*: 3) and 2 non-functional requirements of the system. (**2 points**)
2. Write 2 user stories for the Administrators, Health service management. (**2 points**)
   (Ex: **As a** [customer], **I want** [shopping cart feature] **so that** [I can easily purchase items online].)
3. Suggest the most suitable software development model to build this system and clarify why you choose this model by the following criteria: (**3 points**)
   a. Requirements characteristics
      - reliability
      - types and number of requirements
      - how often the requirements can change
      - can the requirements be defined at an early stage
   b. Development team:
      - team size
      - level of understanding of user requirements by the developers
   c. User involvement in the project (Small/Average/Large)
4. Draw a story map (at least 3 levels) for the "Managing involuntary detention" feature.(**3 points**)