***Enrol. No.*_____**

International Institute of Health Management Research (IIHMR)
NEW DELHI

Health care IT - Batch- 2019-21
Term Exams

Time – 2 Hrs **Total marks: 70**

HIT – 706 Designing for Healthcare Information Technology

1. ABC Hospital is a Multi-Speciality Hospital with 550 beds. The management is planning to implement IOT based Remote Cardiac Monitoring System. Due to its very high potential, the Internet of Things (IoT) concept has been adopted. These systems enable real-time monitoring of patients at home, by using devices for acquiring various medical parameters or wearable devices that allow real-time monitoring of the medical signals. The data are transmitted to a medical specialist's office via the Internet and can be stored in cloud for further analysis. Can you devise an architecture of how the system will work. In other words can you design such a system considering the latest digital technologies. Look into all angle from data collection, storage, monitoring, security etc. (Marks 20)

2. Consider the same scenario given in question 1, as HIT System Manager you are now given the responsibility to select a vendor who can design your system. What will be the steps you will adopt? What will be the criteria you will look for? Consider the answer you gave in question 1 as the base for answering the current one. (Marks 15)

3. A 900-bed teaching tertiary care hospital, with 21 bed ICU had the following existing workflow: It was staffed by board certified intensivists 24 hours per day, 7 days a week with rotating residents from different specialties. Nursing staff were multinational with patient-to-nurse ratio of 1:1. The hospital was accredited by Joint Commission International. Physicians wrote medication orders on paper; nurses then faxed the orders to the ICU satellite pharmacy; the pharmacist would screen the order, make necessary adjustments after consulting with the prescribing

physician if needed, transcribe the order and dispense the medication. There were sporadic cases of prescription errors due to illegible and incomplete orders and adverse drug events. What digital steps the hospital can take to avoid these problems? (Marks 15)

4. A growing body of evidence shows that infectious diseases have significant negative socioeconomic consequences on vulnerable populations across the world. The impact is enormous in most low- and middle-income countries (LMICs) in sub-Saharan Africa, where capacity for risk management of emerging and reemerging diseases is inadequate, thereby posing challenges to both human and livestock health systems. Infectious diseases account for approximately 40% to 50% of global morbidity and mortality in humans, with LMICs recording higher proportions of infectious disease contributions to morbidity and mortality compared with high-income countries. It has been recognized that approximately 70% of emerging diseases of humans have an animal origin. Furthermore, infectious diseases in animals constitute a major constraint to livestock-dependent livelihoods and are the single most important barrier to the export of African livestock commodities to lucrative markets. These observations, together with increasing international movement of people and commodities, alarming increase in antimicrobial resistance, as well as climate variability or change, emphasize the need for a One Health approach to strengthen risk management of infectious diseases in LMICs. Application of information and communication technology (ICT)–based solutions to enhance early detection, timely reporting, and prompt response to health events in human and animal populations will promote Community Level One Health Security (CLOHS). This will complement international disease surveillance strategies with participatory engagement of local communities and enhance early disease detection and response at community, national, regional, and global levels.

Devise a strategy to implement a participatory surveillance system that relies on digital and mobile technology solutions. (Marks 20)