INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH

IIHMR DELHI

Post Graduate Diploma in Management (Hospital & Health Management)

PGDM – 2024-26 Batch

1st Year – 2nd Semester End Examination

Subject & Code : **Introduction to Digital Health-II (DH-II)-CC 618**	**Reg. No.** :
Semester & Batch : **II, 2024-26**	**Date** : **16-04-2025**
Time & Duration : **10:30 A.M.-01:30 P.M. (3 Hrs.)**	**Max. Marks** : **70**

Instructions:

- Budget your time as per the marks given for each question and write your answer accordingly.
- Don't write anything on the Question Paper except writing your Registration No.
- Mobile Phones are not allowed even for computations.

Part A: Q.1 to Q.10 all questions are compulsory (10 X 2 Marks = 20 Marks)

1. Telehealth and Telemedicine are same (True or False).

2. Metaverse has a digital twin as one of its components. (True or False)

3. In augmented Reality one can interact with the virtual environment (True or False)

4. What is a key benefit of digital health in India's healthcare ecosystem?

   a) Increased paperwork for healthcare providers.

   b) Higher healthcare costs for patients.

   c) Improving care quality and enhancing healthcare access.

   d) Reduced patient education and awareness.

5. Which challenge does digital health aim to tackle in India's healthcare system?

   a) Limited accessibility and inadequate infrastructure.

   b) Surplus of skilled professionals.

   c) Overabundance of healthcare facilities.

   d) Lack of diverse disease burden.

6. What is one of the primary services provided at a sub-center in India's healthcare infrastructure?

   a) Advanced surgical procedures.

   b) Specialized cancer treatment.

   c) Essential services like immunization and checkups.

   d) Training of healthcare professionals.

7. Which of the following is a general term used to refer to the application of digital information and communication technology to health care?

    a)   digi-health

    b)   e-health

    c)   i-health

    d)   tech-health

8. Which of the following is NOT true with respect to telehealth services and money?

    a)   All states require that telehealth services be reimbursed by insurance companies.

    b)   Some providers are afraid of increasing competition that might occur as a result of telehealth services.

    c)   Some providers may feel that telehealth services, like teleradiology firms, are their competitors.

    d)   There is some concern that telehealth services may actually drive up healthcare costs.

9. The use of artificial intelligence is incorporated into healthcare to help providers _____.

    a)   see more patients in an efficient manner by using overlap systems

    b)   sift through vast amounts of data to help providers and patients make informed decisions

    c)   make decisions for patients

    d)   bypass the attempt to stay current in practice

10. What is a block chain?

a) Centralized digital ledger containing records called as blocks

b) Decentralized, distributed, digitalized ledger containing records called as blocks

c)   Digital database consisting of records called class

d) None of the above

Part B: Q.11 to Q.15 attempt any four questions (4 X 5 Marks = 20 Marks)
Short Notes

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11. Dr. Kumar, a general practitioner in a rural area, has recently adopted a telemedicine platform to expand healthcare access for his patients. One of his long-term patients, Mrs. Sharma, who suffers from chronic hypertension, has been unable to visit the clinic for her routine check-up due to mobility issues. Dr. Kumar schedules a video consultation through the telemedicine platform to review her condition and adjust her treatment plan. During the consultation, Dr. Kumar asks Mrs. Sharma to take her blood pressure measurements and share the data through the telemedicine app, which is connected to her home monitoring device. Mrs. Sharma successfully uploads her blood pressure readings, and Dr. Kumar advises her on necessary lifestyle changes and medication adjustments.

Question:

Explain how telemedicine, as demonstrated in this scenario, can benefit patients like Mrs. Sharma, particularly in rural areas. Discuss any potential challenges Dr. Kumar might face when implementing telemedicine for chronic disease management?

12. Explain the differences between using Virtual Reality (VR) and Augmented Reality (AR) in educating nurses about CPR. Discuss how each technology can enhance the learning experience and the potential advantages and challenges of using VR and AR for CPR training.

13. Illustrate use of 5 applications of AI/ML in healthcare

14. Sarah, a 65-year-old woman with a history of heart disease and hypertension, lives in a rural area where access to healthcare facilities is limited. She has been experiencing increased fatigue and occasional chest pain. To manage her condition, Sarah uses a connected healthcare system that integrates various health monitoring devices with her healthcare provider's system.

How does connected healthcare scenario demonstrate the benefits of remote monitoring and telemedicine in managing chronic conditions like heart disease? What challenges healthcare providers might face when implementing such systems, and how can they overcome them?

15. Analyze how a digital twin can help in reduce the complexity of onboarding new medical insurance clients by FeelRight a healthcare insurance provider.
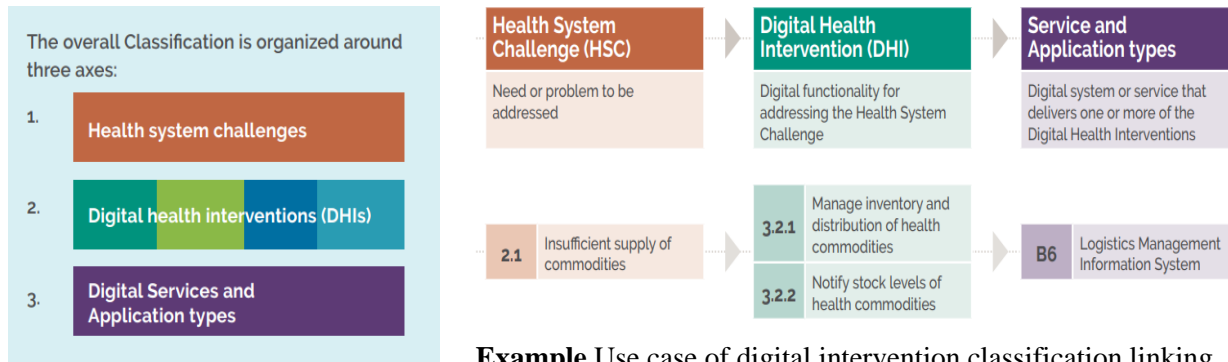

Part C: Q.16 to Q.19 attempts any three questions (3 X 10 Marks = 30 Marks)
Long Notes

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16. Government is initiating new activities for eradicating tuberculosis as a part of achieving SDG by 2030. The policy is to adopt the Predictive, Preventive, Personalized, Participatory, Public (population), Psychosocial, and Proactive, the P7 framework for providing virtual care to address this. Adopting this develop an action plan for addressing the Tuberculosis eradication considering the context, actors, outcome, one activity to achieve the outcome.

17. Climate responsive telemedicine (CRT) is increasingly promoted through policy changes focusing on climate change risk mitigation and providers acceptance of telemedicine globally. It focuses on three key areas - providing a telemedicine system resilient to climate-induced disruptions, delivering climate specific healthcare services and enabling cost-effective and scalable solutions. Suggest a CRT approach for addressing health issues related to health waves and rise in temperature during peak summers in India. Analyze the unique challenges in designing the interventions.

18. WHO has updated its digital intervention classification to include new technologies post covid in its classification.

Example Use case of digital intervention classification linking HSC, DHI and service application type for inventory

Health system challenges are categorized as – Information, Availability, Quality, Availability, Utilization, Efficiency, Accountability and Equity.

Digital Health Interventions to name a few are categorized as for Individuals/ Persons (targeted communications, Untargeted communications, person to person communications, Personal health trackers) and for Providers (Person centered health records, telemedicine, healthcare provider communication, healthcare provider decision support, healthcare provider training) among others.

The **digital services and application types** represent the types of software, information and communications technology (ICT) systems and services or communication channels that deliver or execute the digital health intervention(s) and health content. The classification categorizes them into 5 representations as point of service, health system/ provider administration services, registries& directories, data management services and Surveillance & Response systems.

Looking at the use case given, propose two interventions highlighting the components, one for individuals and one for provider addressing any one of the eight health system challenges. Indicate the type of service category they belong to.

19. Digital interventions hold promise for addressing mental health issues and elder abuse, offering accessible and scalable solutions. Studies have shown their effectiveness in reducing social isolation and depression in older adults, and in improving mental health outcomes for victims of abuse. Considering the new developments happening in digital technologies, identify two digital interventions, one for addressing mental health and one for elder abuse. These interventions need not be linked with each other. They may or may not be based on home health care also. Explain briefly about the technology behind the intervention, the approach (how it works) and expected outcome.