Post Graduate Diploma in Management (Hospital & Health Management)
PGDM – 2021-23 Batch
Term – III : Term End Examination

Course & Code	:	Designing For HIT , HIT 706	Reg. No.	:	
Term & Batch	:	III, 2021-23	Date	:	30/09/2022
Duration	:	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 (10 questions*1 marks = 10 marks).
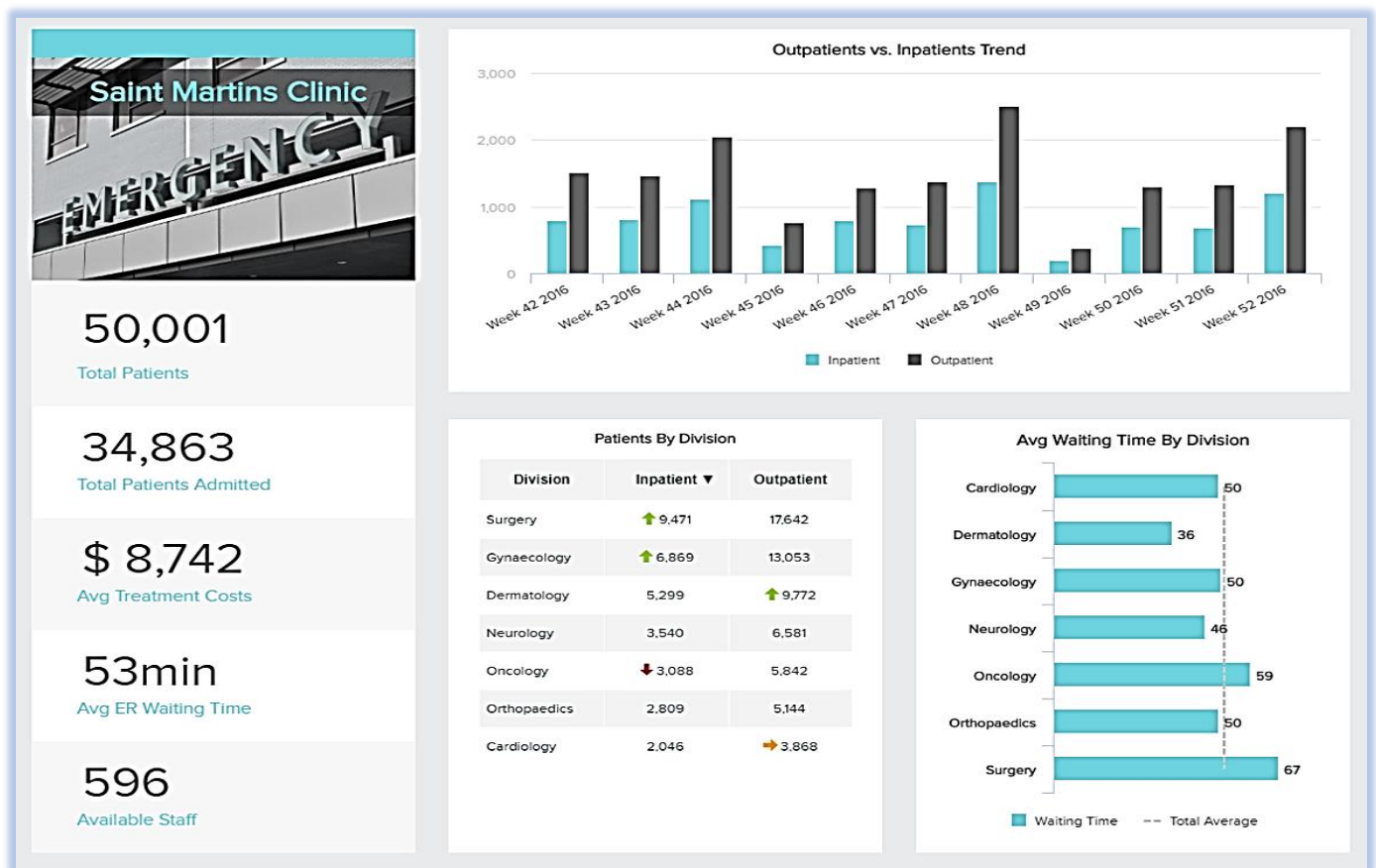
Match the Column A and Column B

S.No	Column A	Column B
1	Robotic Process Automation	Flight Simulator
2	Natural Language Processing	Video Games
3	Non Immersive Virtual Reality	pre-programmed software tools to automate labor-intensive tasks
4	Semi-Immersive Virtual Reality	Labelled data
5	Reinforced Learning	Un-labelled data
6	Deep Learning	Artificial Intelligence induced Radiology
7	Supervised Learning	large amounts of unlabelled or unstructured data through multiple layers of learning
8	Unsupervised Learning	model learns dynamically to achieve the desired output through trial and error
9	Restorative Imaging Diagnostics	Virtual Cooperation with specialists
10	Virtual Health Assistance	Extracting value from text and voice

Answer

1		2		3		4		5	
6		7		8		9		10	

Part B: Q.11 to Q.15 (4 questions *5 Marks =20 Marks) Attempt any four.

11. An hospital is interested in developing dash boards to monitor few performance indicators. Identify two indicators for monitoring patient satisfaction

12. A Telemedicine platform will be implemented in Durgavati hospital in Rural Ranchi. What are the pre-implementation strategies to be adopted?

13. Piramal biotech is interested in obtaining FDA approval for the pill they are developing for treating thyroid abnormality. They have collected data from 1500 patients who had participated voluntarily. The patient data are not labelled. What type of Machine Learning can be applied for the data? What type of output can you expect?

14. A 350 bedded hospital has implemented a Robot based strategy that works as "May I Help You" executive to help the patients register (old/ new) when they enter the premises and also to provide directions to concerned department OPDs. How will you utilise the STEPS method to evaluate the technology solution. (Hint: Devise one question for each parameter under STEPS).

15. What important information is the dashboard revealing? Are there any business/ operation related decisions that can be made by looking at the dashboard.

Saint Martins Clinic

50,001	Total Patients
34,863	Total Patients Admitted
$ 8,742	Avg Treatment Costs
53min	Avg ER Waiting Time
596	Available Staff

Outpatients vs. Inpatients Trend

Patients By Division

Division	Inpatient ▼	Outpatient
Surgery	↑ 9,471	17,642
Gynaecology	↑ 6,869	13,053
Dermatology	5,299	↑ 9,772
Neurology	3,540	6,581
Oncology	↓ 3,088	5,842
Orthopaedics	2,809	5,144
Cardiology	2,046	→ 3,868

Avg Waiting Time By Division

Division	Waiting Time
Cardiology	50
Dermatology	36
Gynaecology	50
Neurology	46
Oncology	59
Orthopaedics	50
Surgery	67

Part C: Q.16 to Q.20 (4 questions *10 Marks =40 Marks) Attempt any four.

In the traditional model of Eye treatment, new patients from the community and primary care setting typically have to go through long and convoluted journey before eventually 'arriving' at tertiary eye hospitals. Furthermore, on eventual arrival at tertiary eye clinics, patients would typically further encounter a complicated clinical workflow with long waiting times and multiple preliminary and confirmatory investigations (eg, visual acuity (VA), intraocular pressure (IOP), scans such as optical coherence tomography (OCT) and visual fields (VFs)), resulting in multiple 'touch points' and interactions with different providers (ie, optometrists, ophthalmic technicians, nurses, doctors, pharmacists), before being diagnosed and given a management plan. All these factors increase exposure and thus the risk of contracting COVID-19, which is now known to spread through asymptomatic carriers (both patients and healthcare providers). Second, many patients need not be seen at tertiary eye centres. New case referrals and follow-up appointments at these eye centres may not be considered urgent or essential during the COVID-19 pandemic and even immediately in the early phases of 'reopening'. However, the typical referral of new patients from primary care setting is based on self-reported symptoms or suboptimal VA level measured by the Snellen test, which is known to have higher false-positive rates. In fact, prior to COVID-19, a large number of new referral cases to tertiary eye centres are attributed to visually insignificant cataracts, dry eyes or even refractive error (which merely requires provision of spectacles).Similarly, a large proportion of follow-up appointments (eg, stable cataract and glaucoma, post cataract surgery or stable retinal diseases) in many eye centres could be deferred and postponed. Thus, during and after the COVID-19 pandemic, it is important to reduce non-urgent referrals and non-urgent follow-ups to eye centres. This will also reduce non-essential human movement in the community. There is an enormous opportunity for implementation of digital health in ophthalmology.

16. How can digital technology be utilized for effective implementation in the community?
17. How can telehealth be utilized in the above scenario?
18. How can AI be used for effective triaging urgent cases?
19. An 'All –in-One' mobile application is planned. Provide a short description of the functions it can contain.
20. Can VR/ AR be used in education, training or treatment? If so how?