

Name: \_\_\_\_\_

Class: \_\_\_\_\_

**Jurong Pioneer Junior College****2022 JC 2 H2 Computing Mock Practice 2 (Paper 1)**

- 1 Every year students get posted to XYZ JC through the Joint Admissions Exercise (JAE). The following table `STUDENT` shows information stored by the school in a computerised flat file.

StudentID	StudentName	ClassID	ClassSize	SubjectName	LecturerID
0192	Alex Ang	SC100	150	Mathematics	LLY
				Physics	JAM
				Chemistry	TEH
0193	Lucy Liu	AR100	50	Geography	OSM
				History	NLM
				Literature	ZAL
0194	Norizah Nur	SC105	60	Computing	NZF
				Physics	JAM
				Mathematics	LLY
0195	Saifu Shafie	SC100	150	Mathematics	LLY
				Physics	JAM
				Chemistry	TEH
0196	Ragu Ram	SC105	60	Computing	NZF
				Physics	JAM
				Further Math	YWZ
				Mathematics	LLY
0197	Aiyai Akai	AR101	70	Geography	OSM
				History	NLM
				China Studies	CKL

It is given that,

- Each student is identified by a unique student identification number, `StudentID`.
- Students are enrolled to a class.
- Each subject is taught by **one** lecturer only.
- Every student will read at least **three** subjects.

(a) State **two** disadvantages of a computerised flat file system.

[2]

(b) What is normalisation?

[2]

- (c) Why is the table given above not expressed in its First Normalised Form (1NF)? Justify your answer by using the data given in the table [2]
- (d) Write in standard notation when the data is normalised to the following forms.
- (i) 1NF, [2]
  - (ii) 2NF, [2]
  - (iii) 3NF. [2]
- (e) Draw an entity relationship (E–R) diagram to represent this data model in 3NF and label the relationships. [3]
- (f) By stating an example from this database, explain what is meant by a:
- (i) primary key, [2]
  - (ii) composite key, and [2]
  - (iii) foreign key. [2]
- (g) Write SQL commands to
- (i) create `STUDENT` table. [2]
  - (ii) insert the record of a new student, 'Sara Lee' from class 'AR100' with student identity number '0201' into the `STUDENT` table. [2]

- 2 The Personal Data Protection Act (PDPA) is a data protection law comprising various rules that govern the collection, use, disclosure and care of personal data. It recognises both the rights of individuals to protect their personal data, including rights of access and correction, as well as the needs of organisations to collect, use or disclose personal data for legitimate and reasonable purposes.
- (a) What is personal data and state an example of a personal data. [3]
- (b) Describe **two** ways, an organisation can take in order to better safeguard personal data of clients stored in their computer systems. [2]

**END-OF-PAPER**