

AGA KHAN UNIVERSITY EXAMINATION BOARD

HIGHER SECONDARY SCHOOL CERTIFICATE

CLASS XI

MODEL EXAMINATION PAPER 2020

Computer Science Paper I

Time: 50 minutes Marks: 35

INSTRUCTIONS

1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 35 only.
4. In each question, there are four choices A, B, C, D. Choose ONE. On the answer grid, black out the circle for your choice with a pencil as shown below.

Correct Way		Incorrect Ways	
1	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D	1	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D
		2	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D
		3	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D
		4	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D

Candidate's Signature

5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new circle.
6. DO NOT write anything in the answer grid. The computer only records what is in the circles.

1. The MOST suitable type of computer that is used by meteorological department for weather forecasting is
 - A. mainframe computer.
 - B. microcomputer.
 - C. supercomputer.
 - D. minicomputer.
2. Voice calls on computer via internet connection can be made by using
 - A. device driver.
 - B. utility software.
 - C. operating system.
 - D. application software.
3. Consider the given sample of a bank cheque.

YOUR NAME
123 YOUR ADDRESS
ANYWHERE, U.S.A. 12345

101
00-00/000

Date _____

Pay to the Order of _____ \$ _____

Dollars

HFS FEDERAL CREDIT UNION
632 KINOOLE STREET
HILO, HI 96720-3894

for _____

⑆ 3 2 1 3 7 8 6 6 0 ⑆ 0 0 0 0 1 2 3 4 5 ⑆

- A device that would read the numbers written at the bottom left of this cheque would be
- A. optical mark reader.
 - B. optical character reader.
 - C. quick response code reader.
 - D. magnetic ink character reader.
4. An example of a device that acts as both input and output device is
 - A. printer.
 - B. scanner.
 - C. touch pad.
 - D. touch screen.
 5. Resolution is used to measure the quality of the
 - A. printer.
 - B. light pen.
 - C. microphone.
 - D. digital camera.

6. Which of the following uses electron gun while displaying picture on screen?

- I. LED
- II. LCD
- III. Monitors

- A. I only
- B. III only
- C. I and II
- D. II and III

7. The CORRECT categorisation of devices that are used in four steps of data processing cycle is

	Input	Processing	Storage	Output
A	Digital Camera	Control Unit	RAM	Projector
B	Projector	Control Unit	RAM	Digital Camera
C	Scanner	Arithmetic Logic Unit	ROM	Printer
D	Printer	Arithmetic Logic Unit	ROM	Scanner

8. As compared to dynamic RAM (DRAM), the static RAM (SRAM)

- A. is faster.
- B. is low-priced.
- C. refreshes periodically.
- D. requires less number of transistors.

9. An example of sequential access memory device is

- A. hard disk.
- B. compact disc.
- C. flash memory.
- D. magnetic tape.

10. The CORRECT arrangement of optical discs in terms of their storage capacity is

	Low	High
A	DVD	CD BD
B	CD	DVD BD
C	BD	CD DVD
D	CD	BD DVD

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11. Fatima purchased a CD which contains video files. She can copy video files from CD to her computer but she cannot copy anything back on the CD.

The type of CD she purchased is

- I. CD-R
 - II. CD-RW
 - III. CD-ROM
- A. II only.
B. III only.
C. I and II.
D. I and III.
12. Flash memory is a type of
- A. SRAM.
B. DRAM.
C. EPROM.
D. EEPROM.
13. The number of gibibyte in 102223394 kibibytes are
- A. 97.488
B. 102.223
C. 102223
D. 99827.533
14. If ALU performs any operation, then the operand values are stored in two registers and the result of the operation is stored into one of the registers.

Based on the given description, which of the following is CORRECT?

	Registers that Store Operand Values	Register that Store Result of an Operation
A	Accumulator Register and Data Register	Accumulator Register
B	Accumulator Register and Data Register	Data Register
C	Instruction Register and Base Register	Instruction Register
D	Instruction Register and Base Register	Base Register

15. Consider the given table showing four memory address locations and content stored in them.

Memory Address	Content
00000	11001100
00001	10101010
00010	10001001
00011	11000001

If a Program Counter (PC) holds memory address 00010 at the beginning of fetch cycle, then what would be stored in the registers mentioned in the following table?

	MAR	MDR	IR
A	00011	11000001	11000001
B	00011	11000001	00011
C	00010	10001001	00010
D	00010	10001001	10001001

16. As compared to RISC, the CISC architecture

- has complex instructions.
- typically has fewer instructions.
- instructions utilise less number of cycles.
- is typically used by smartphones and tablets.

17. An example of one address instruction is

- HALT
- JMP
- MOV
- ADD

18. Read the given features of a port.

- It is round in shape.
- It is a type of serial port.
- Keyboard and mouse are connected to it.

The port that has all of these features is the

- PS/2 port.
- USB port.
- HDMI port.
- fire wire port.

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19. As compared to system unit, a CPU

- A. is larger in size.
- B. has power supply unit.
- C. is located on the motherboard.
- D. protects and holds all components at a fixed point.

20. Consider the given IP address.

191.170.250.252

This IP address belongs to

- A. class A.
- B. class B.
- C. class C.
- D. class D.

21. As compared to IPv4, the IPv6

- A. has 32-bit address length.
- B. has checksum field in its header.
- C. provides encryption and authentication.
- D. address consists of 8 octets and each octet consists of 8 bits.

22. The CORRECT categorisation of protocols at the given layers of OSI model is

	Application Layer	Network Layer	Transport Layer
A	HTTP	IP	TCP
B	TCP	IP	HTTP
C	IP	TCP	HTTP
D	HTTP	TCP	IP

23. Sana and Fatima are sitting in the same room and chatting with each other using a social media network service.

This network is an example of

- A. BAN.
- B. PAN.
- C. LAN.
- D. NAN.

24. The number of links required to connect 5 nodes in mesh topology are

- A. 5
- B. 7
- C. 9
- D. 10

25. The option that CORRECTLY depicts the categorisation of examples of transmission modes is

	Simplex	Half-Duplex	Full-Duplex
A	transfer of data from computer to printer	communication over telephone line	communication over walkie-talkie
B	transfer of data from computer to printer	communication over walkie-talkie	communication over telephone line
C	communication over telephone line	communication over walkie-talkie	transfer of data from computer to printer
D	communication over walkie-talkie	communication over telephone line	transfer of data from computer to printer

26. A system that can provide communication over the longest distance is

- A. Wi-Fi.
- B. cellular.
- C. infra-red.
- D. WiMAX.

27. Which of the following options is CORRECT regarding the frequencies used when mobile phones communicate to base stations (BS) and vice versa?

	Frequency to Communicate from Mobile Phone to BS	Frequency to Communicate from BS to Mobile Phone
A	Uplink	Uplink
B	Downlink	Uplink
C	Uplink	Downlink
D	Downlink	Downlink

28. Which of the following arrangement shows the CORRECT number of satellites required to cover the entire Earth?

	Number of LEO Satellites	Number of MEO Satellites	Number of GEO Satellites
A	40 to 80	8 to 20	3
B	3	8 to 20	40 to 80
C	40 to 80	3	8 to 20
D	8 to 20	40 to 80	3

29. In GPS, the MINIMUM number of satellites required to determine the location of a receiver is

- A. 2
- B. 3
- C. 4
- D. 5

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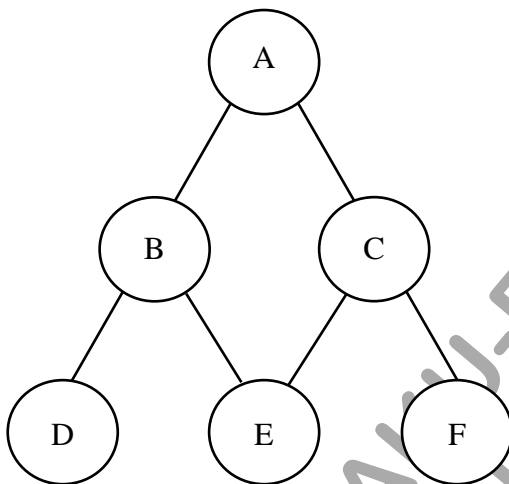
30. Read the following features:

- Creates a MAN
- Transmits information through microwave
- Provides services anywhere within a city

A wireless communication that has all of the given features is called

- A. Wi-Fi.
- B. Infra-red.
- C. WiMAX.
- D. Bluetooth.

31. Consider the given database model.



This model is an example of

- A. network database.
- B. relational database.
- C. hierarchical database.
- D. object oriented database.

32. Consider the given entity relationship diagram (ERD)



The cardinality and modality for the given Entity Relationship Diagram (ERD) are

	Cardinality between University and Department	Modality between University and Department
A	One-to-many	One-to-one
B	Many-to-one	One-to-many
C	One-to-one	One-to-one
D	One-to-many	One-to-many

Use the given database table named as **T20Data** showing the data of top 5 men's T20I team rankings as on August 26, 2019 to answer Q.33, Q.34 and Q.35.

Position	Team Name	Matches	Points	Rating
1	Pakistan	26	7365	283
2	England	16	4253	266
3	South Africa	16	4196	262
4	India	31	8099	261
5	Australia	21	5471	261

33. If the descending sort is applied on the **Team Name** field of this table, then the team names that would appear above India in the table would be
- South Africa and Pakistan.
 - England and South Africa.
 - England and Australia.
 - Australia and Pakistan.
34. The SQL query to delete the Rating column from the table is
- ALTER TABLE T20Data DROP COLUMN Rating
 - DROP COLUMN Rating ALTER TABLE T20Data
 - ALTER TABLE T20Data DELETE COLUMN Points
 - DELETE COLUMN Points ALTER TABLE T20Data

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35. A query is constructed in design view so that it would display position number and the names of only those teams who have played more than 20 matches and have rating of less than 265.

This query is split into two parts. Given is the first part of the query.

Field:	Position	Team Name
Table:	T20 Data	T20 Data
Sort:		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		
or:		

To retrieve the required records, the second part of this query is

A	Matches	Points	Rating
	T20Data	T20Data	T20Data
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	> 20		< 265
B	Matches	Points	Rating
	T20Data	T20Data	T20Data
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	< 20		> 265
C	Matches	Points	Rating
	T20Data	T20Data	T20Data
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	> 20		< 265
D	Matches	Points	Rating
	T20Data	T20Data	T20Data
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	> 20		< 265

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