AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS IX

MODEL EXAMINATION PAPER 2020

Computer Science Paper II

Time: 2 hours 15 minutes   Marks: 35

INSTRUCTIONS

Please read the following instructions carefully.

1.   Check your name and school information. Sign if it is accurate.

> **I agree that this is my name and school.**
> **Candidate's Signature**

RUBRIC

2.   There are SIX questions. Answer ALL questions. Questions 5 and 6 each offer TWO choices. Attempt any ONE choice from each.

3.   When answering the questions:

Read each question carefully.
Use a black pointer to write your answers. DO NOT write your answers in pencil.
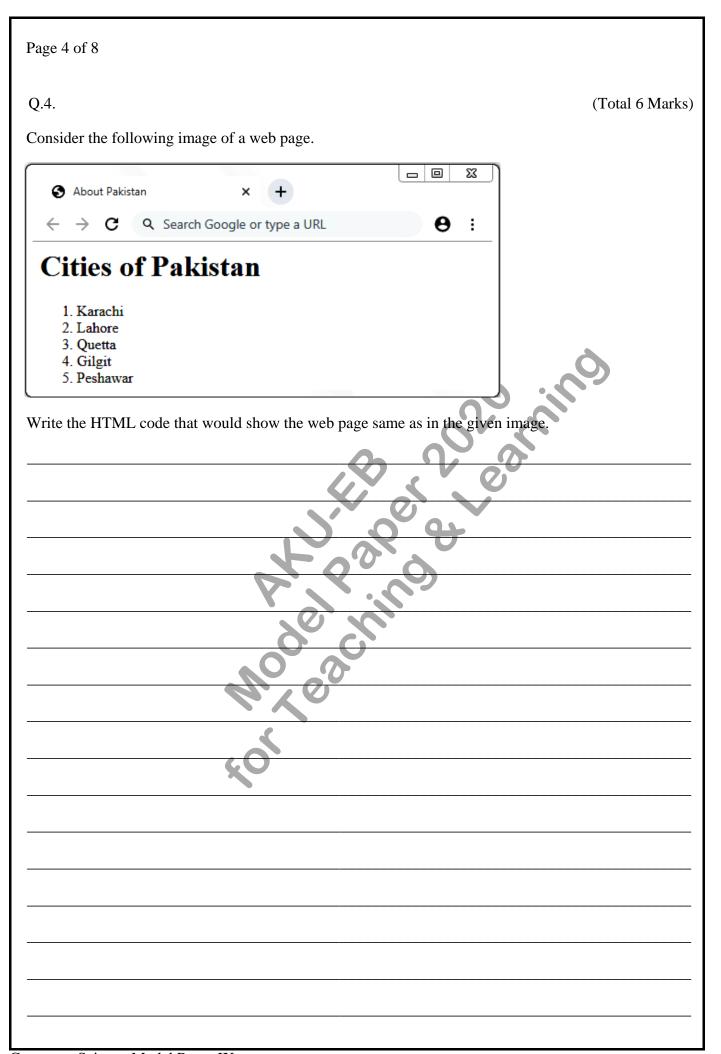Use a black pencil for diagrams. DO NOT use coloured pencils.
DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.
Complete your answer in the allocated space only. DO NOT write outside the answer box.

4.   The marks for the questions are shown in brackets ( ).

Q.1. (Total 5 Marks)

a. Identify the sensor that should be used for each of the applications given in the table. (3 Marks)

Application of Sensor	Name of Sensor
Controlling a central heating system	
Monitoring pollution in rivers	
Counting the number of persons entering a building	

b.

    i.   Why is the cache memory used in a computer even though the RAM is already present?

(1 Mark)

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    ii.   Differentiate between Level 1 (L1) cache and Level 2 (L2) cache. (1 Mark)

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Q.2. (Total 3Marks)

Define the following three types of operating system.

Batch Processing System	Timesharing System	Real Time System

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Q.3. (Total 6 Marks)

a.

    i.   If an analog signal carries 5 bits in each signal unit and has data rate (bit rate) of 4000 bits per second, then what is the baud rate of this signal? (1 Mark)

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    ii.   If an analog signal carries 4 bits in each signal unit and 1500 signal units are sent per second, then what is the data rate of this signal? (1 Mark)

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b.

    i.   Describe the half-duplex data transmission mode. (1 Mark)

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    ii.   Mention an example of the simplex transmission mode. (1 Mark)

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c.   Differentiate between the following data transmission terms.

    i.   Attenuation and Amplification (1 Mark)

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    ii.   Distortion and Cross Talk (1 Mark)

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Q.4. (Total 6 Marks)

Consider the following image of a web page.

Write the HTML code that would show the web page same as in the given image.

Q.5.   (Total 7 Marks)

EITHER

a.

i.   Describe the following types of system software.   (4 Marks)

   I.   Device Driver
   II.   Utility Program
   III.   Operating System
   IV.   Language Processor

ii.   Differentiate between shareware and freeware software in THREE points.   (3 Marks)

OR

b.

i.   Draw the block diagram of a computer system.   (2 Marks)

ii.   Describe the function of each component of block diagram drawn in part i.   (5 Marks)

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Q.6.   (Total 8 Marks)

EITHER

a.   Describe the following types of network topologies with the help of a diagram of each.

    i.   Bus Topology   (2 Marks)
    ii.   Star Topology   (2 Marks)
    iii.   Ring Topology   (2 Marks)
    iv.   Mesh Topology   (2 Marks)

OR

b.   Describe any THREE features and draw a diagram for each of the following transmissions.

    i.   Synchronous Transmission   (4 Marks)
    ii.   Asynchronous Transmission   (4 Marks)

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END OF PAPER

Please use this page for rough work