

Model Question of HSC Examination-2020(All Board)

Time : 2 hours 35 Minutes

Information and Communication Technology

Subject Code : 275

Creative Question

Marks : 50

[N.B. Answer any five questions. The figures in the right margin indicate full marks.]

1. ► Aziz is a University student. He always completes his task in time and tries to do his work in different ways. For solving different class work, he surfs the internet for getting knowledge about the topic and finds solutions. He always gives the proper reference of the contents which he is using. Rony is a friend of Aziz, he also makes his class works by using internet but he does not give the reference of the content.

- What is flip-flop? 1
- "The function of *encoder* and *decoder* is vice-versa". Explain. 2
- How Internet could help in education— explain in details. 3
- Is there any difference between Aziz and Rony's internet usage? In which way we should use internet? 4

2. ► Look at the series and answer the following questions :

$$1 + 2 + 3 + \dots + 100.$$

- What is cloud computing? 1
- Differentiate between indexing and sorting. 2
- Draw a flowchart to add all the odd numbers of the given series. 3
- Develop a C program to calculate the area of a circle maintaining at least four sections of the basic structure of C program. Also analyze each section of the developed program accordingly. 4

3. ► Observe the database table below and answer the following questions :

Roll	Name	Address

Student

Reg. No	Total Number	Grade	Roll

Result

- What is geostationary satellite? 1
- Mention *four points* on the difference of register and counter. 2
- Which field(s) will act as primary or foreign key in Student and *Result* table? Explain. 3
- Which type of relationship may be done between the tables mention in the stem? Analyze. 4

4. ★ Ritu thought of setting up a Network with the 4 (four) digital device of their house through a central connecting device. She wanted to use a central device so that the whole Network system does not go out order in case of any disorder of any digital device. But her brother wanted to set up a Network only with the help network backbone cable to minimize the cost.

- What is constant C? 1
- Why C is also called mid level language? 2
- Explain the Ritu's network setup with necessary figures. 3
- Of the brother-sister concepts, which do you think is more logical for setting up a network system as in the stem? Illustrate your answer. 4

5. ★ Observe the figures below carefully and answer the following questions accordingly.

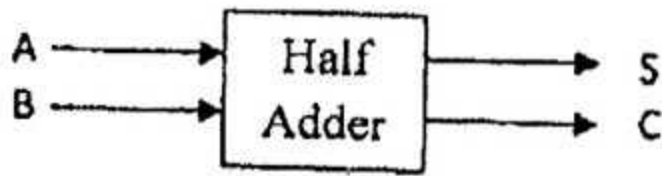


Figure-1

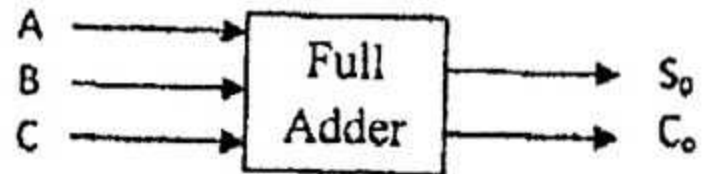


Figure-2

- What is the elaboration of *stdio.h* in C? 1
- What is the difference between *void main ()*, *int. main ()*. Explain. 2
- Implement the logic circuit for S of Figure-1 using Universal gates. 3
- Is it possible to implement the logic circuit of Figure-2 using Figure-1? Analyze. 4

6. ► The first satellite Bangabandhu-1 satellite named after the father of the Nation Bangabandhu Sheikh Mujibur Rahman, is one and only satellite of Bangladesh. It carries a total of 40 transponders (26 Ku-band and 14 C-band transponders) with a capacity of 1600 MHz. In the outer section of the satellite the red-green flag of Bangladesh is painted and on the flag there is written "Bangabandhu-1" in English and Bangla. There is also a monogram of the government of Bangladesh. This satellite weighs 3,500 kg and it is a Geo Stationary one.

- What is data encryption? 1
- Is compiler one kind of translator program? Explain. 2
- Which type of microwave transmission is appropriate for Bangabandhu-1? Explain. 3

- d. Analyze the opportunities and challenges Bangladesh will face for lunching Bangabandhu-1. 4
7. ★ The circumference of a circular field is $(400.85)_{10}$ meters. In a certain running completion Sohan, Sazzad and Sagor take $(11110010)_2$ second, $(340)_8$ second and $(E1)_{16}$ second, respectively to run around the whole field.
- a. What is radix point? 1
- b. Differentiate between attribute and element in HTML program segment with example? 2
- c. Calculate the circumference of circular field in binary. 3
- d. Find out the time difference between the first and second position holder competitors by means of addition. 4
8. ★ Look at the web page and answer the following questions :

E-Shop

Sl. No.	Product Name	Previous Price (Tk.)	Current Price (Tk.)
01	Pendrive	850	650
02	Mouse	500	400
03	Keyboard	400	300

- a. What is IP address? 1
- b. Why more time is needed to transmit data in asynchronous transmission System. Explain. 2
- c. Develop a HTML code for the web page given in the stem. 3
- d. Analyze the HTML tags, attributes and elements needed to develop the given table. 4

Time : 25 minutes

Full marks : 25

[N. B. Answer all the questions. Each question carries one mark. Block fully, with a ball point pen, the circle of the letter that stands for the correct/best answer in the "Answer Sheet" for Objective Type Examination.]

1. **Which one is the backbone of global village?**
 - (a) Computer
 - (b) Human
 - (c) Apps
 - (d) Network
 2. **How many cables are necessary for 10 numbers of PCs in a mesh network?**
 - (a) 10 (b) 30
 - (c) 45 (d) 90
 3. **Which is the application field of computer simulation?**
 - (a) Cloud Computing
 - (b) Cryosurgery
 - (c) Virtual reality
 - (d) Video conferencing
 4. **Internet is so popular to serve holder, because it offers—**
 - i. Secured platform
 - ii. Extra earnings could be made
 - iii. Savings in time

Which one is correct?

 - (a) i & ii (b) i & iii
 - (c) ii & iii (d) i, ii & iii
 5. **Which device is used to connect the network segments of different protocols?**
 - (a) Hub (b) Switch
 - (c) Router (d) Gateway
 6. **From which language the word Hexadecimal has come?**
 - (a) Hebrew and Greek
 - (b) Latin and Egyptian
 - (c) Hebrew and Latin
 - (d) Greek and Latin
 7. **The present age of Sumon is $(1101)_2$. Raton is bigger than Sumon by $(10)_{10}$ years. What is the present age of Raton in Octal?**
 - (a) $(23)_8$
 - (b) $(25)_8$
 - (c) $(27)_8$
 - (d) $(29)_8$
- Read the stem below and answer the question nos. 8 & 9 :**
- X and Y are two friends. They use data transmission system of 9.6kbps and 1Mbps, respectively.
8. **Which type of transmission does X use?**
 - (a) Narrow band
 - (b) Voice band
 - (c) Broad band
 - (d) lower band
 9. **The data transmission of Y is used in—**
 - i. Telephone
 - ii. Satellite
 - iii. Microwave

Which one is correct?

 - (a) i & ii (b) i & iii
 - (c) ii & iii (d) i, ii & iii
 10. **Which technology is used for DNA mapping?**
 - (a) Biometrics
 - (b) Bioinformatics
 - (c) Genetic Engineering
 - (d) Nanotechnology
 11. **Which one of the below is not the part of data Encryption?**
 - (a) Plain text
 - (b) Cyfer text
 - (c) Algorithm
 - (d) Parity bit

12. Which circuit of the following does convert alphanumeric letter into ASCII code?

- (a) Encoder (b) Decoder
(c) Counter (d) Register

13. Which tag is used to join the web pages?

- (a) <a> (b)
(c) (d)

14. How many adders are necessary to perform the addition : $1111 + 1111 = 11110$

- (a) 3 Half adder & 1 Full adder
(b) 3 Half adder & 1 Full adder
(c) 2 Half adder & 2 Full adder
(d) 1 Half adder & 3 Full adder

15. $(6DF)_{16} = (?)_{10}$

- (a) 1755 (b) 1759
(c) 1855 (d) 1859

16. To work in HTML, it requires :

- i. Text editor
ii. Browser
iii. Compiler

Which one is correct?

- (a) i & ii (b) i & iii
(c) ii & iii (d) i, ii & iii

17. What is meant by *s* in *https://*?

- (a) Server (b) Secure
(c) Service (d) Safe

18. Which heading is the biggest?

- (a) h1 (b) h2
(c) h3 (d) h4

19. Which one is the input statement(s)?

- i. scanf()
ii. printf()
iii. getch()

Which one is correct?

- (a) i & ii (b) i & iii
(c) ii & iii (d) i, ii & iii

Consider the program segment below

and answer the question nos. 20 & 21 :
for (i = 1, i <= 10; i = i + 3)

```
{
    printf("ICT");
}
```

20. According to the stem, how many times the text ICT will be shown?

- (a) 2 (b) 3
(c) 4 (d) 5

21. Which type of operator <= is?

- (a) Arithmetic
(b) Relational
(c) Logical
(d) Conditional

22. In which operating system C language is used first?

- (a) Unix
(b) Linux
(c) Mac
(d) Windows

23. Which one is the database language?

- (a) C (b) C++
(c) Java (d) SQL

24. Which relation is correct?

- (a) Query-sorting
(b) Sorting-searching
(c) Indexing-sorting
(d) Searching-specific

25. Which is the correct sequence?

- (a) Letter → field → record → database
(b) Field → record → table → database
(c) Record → field → information → database
(d) Record → field → letter → database

Ans.	1	(d)	2	(c)	3	(c)	4	(c)	5	(d)	6	(d)	7	(c)	8	(b)	9	(c)	10	(c)	11	(d)	12	(a)	13	(a)
	14	(d)	15	(b)	16	(a)	17	(b)	18	(a)	19	(c)	20	(c)	21	(b)	22	(a)	23	(d)	24	(c)	25	(b)		