



## General Certificate of Education (Adv. Level) Support Seminar - 2012

Sample Paper :- Information & Communication Technology I

Preparation :- Ministry of Education

Instruction:

Duration:- Two hours

- Answer all the questions.
- Use of calculators is not allowed.
- Instructions are given on the back of the answer sheet. Follow those carefully.
- In each of the question 1 to 50, pick one of the alternatives from (1), (2), (3), (4), (5) which is correct or most appropriate.

- The first digital computer with a stored program is,  
 (1) ENIAC (2) EDVAC (3) MARK 1  
 (4) PASCALINE (5) ANALYTICAL ENGINE
- What is the technology used in third generation computers?  
 (1) Vacuum tubes (2) Transistors  
 (3) Integrated circuits (4) VLSI (Very Large Scale Integrated Circuits)  
 (5) Micro processor
- Which one of the followings complies with the 8 bit's 2's compliment?  
 (1) 00001010 (2) 00001011 (3) 10001010  
 (4) 11110101 (5) 11110110
- Which of the following medical equipment uses radio waves?  
 (1) CAT scanner (2) MRI scanner (3) CT scanner  
 (4) X – Ray (5) ECG
- Which one of the followings represents the MSD and LSD of 0.025430 respectively?  
 (1) 0 and 3 (2) 2 and 3 (3) 1 and 3  
 (4) 3 and 1 (5) 3 and 0
- $B12_{16} + 5CA_{16} =$   
 (1)  $10DC_{16}$  (2)  $FDC_{16}$  (3)  $1F42_{16}$  (4)  $0DC$  (5)  $E1DC_{16}$
- The hexadecimal equivalent of the octal number 35 is...,  
 (1)  $23_{16}$  (2)  $27_{16}$  (3)  $43_{16}$  (4)  $A1_{16}$  (5)  $1D_{16}$
- Consider the following statements.  
 A – Monotype waves travel in a baseband communication channel.  
 B – Various types of waves travel in a broadband communication channel.  
 C – Frequency is measured in bps (bits per second) in broadband.  
 (1) A only. (2) B only. (3) A and B only.  
 (4) A and C only. (5) All A,B and C .

9. Which of the following data communication is used in frequency division multiplexing?  
 (1) Digital signal (2) Analog signal  
 (3) Digital and analog signal (4) Laser beam and Infrared beam  
 (5) Infrared beam and Bluetooth
10. An example of a Closed System is,  
 (1) Respiratory system (2) Digestive system (3) Blood Circulatory system  
 (4) A library system in a school (5) Refrigerator
11. Which of the following is a functional requirement of a bicycle when it is taken as a system?  
 (1) The cost for purchasing a bicycle.  
 (2) The comfortability of the bicycle seat.  
 (3) Proper functioning of the break  
 (4) Ability to use of bicycle in transportation.  
 (5) Finished appearance of the bicycle.
12. In which of the following test the user checks the accomplishment of user requirements in a information system?  
 (1) Unit test (2) Integrated test (3) System test  
 (4) Acceptance test (5) Black box test
13. What is the maximum number of host computers that can be connected to a network of IP address – 192.168.10.7 and a Subnet mask of 255.255.255.192?  
 (1) 32 (2) 62 (3) 64 (4) 126 (5) 128
14. Which of the following servers converts the web addresses into IP address?  
 (1) Web server (2) DNS Server (3) DHCP Server  
 (4) File server (5) FTP server
15. GPRS stands for,  
 (1) Global Ping Resource System (2) Global Packet Radio Station  
 (3) Global Ping Radio Service (4) General Packet Radio Service  
 (5) General Packet Radio Station
16. What is the output of “Python” statement  $10*2**3\%7$ ?  
 (1) 1 (2) 2 (3) 3 (4) 10 (5) 60
17. Which of the following “Python” statement is acceptable?  
 A - a, b = 2+5, 2\*5  
 B - X, Y = Y, X  
 C - X, Y = 5, ‘Saman’  
 (1) A only. (2) A and B only. (3) B and C only.  
 (4) A and C only. (5) All A, B and C.
18. Select the output of the following “Python” program.  

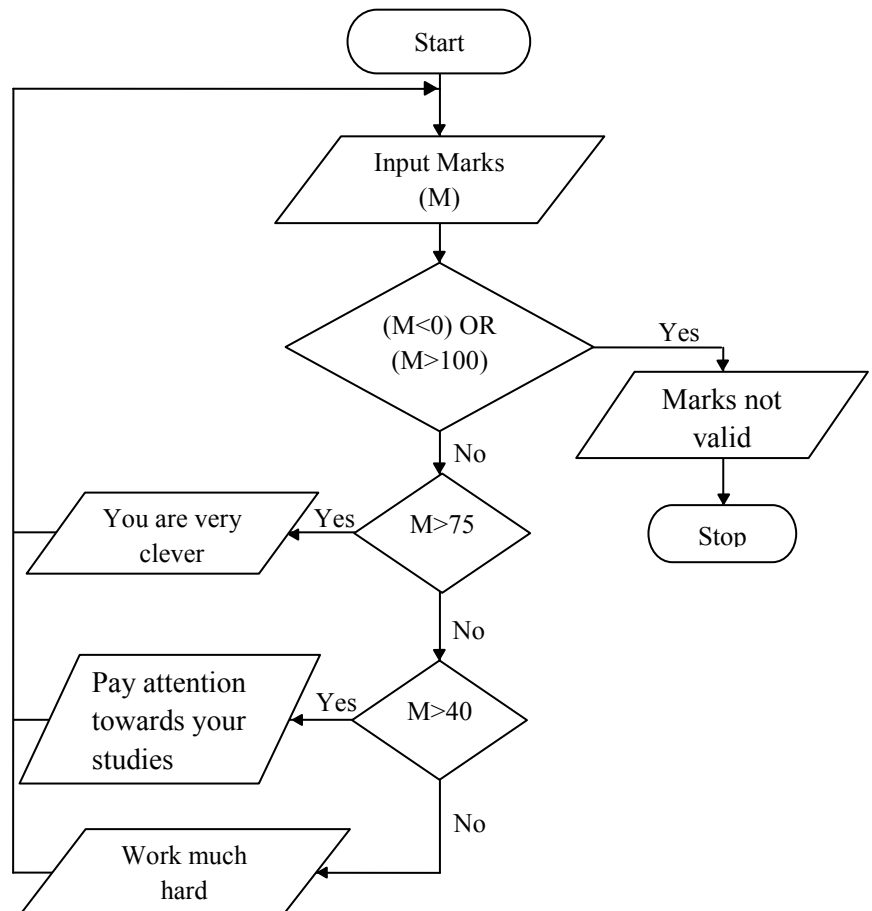
```

a = 3
def max (a,b):
    if a>b:
        return a
    else:
        return b
print max (7,6),
print (a)

```

 (1) 3 7 (2) 7 3 (3) 7 6 (4) 7 7 (5) 7 6 3

19. Which of the following “Python” data type is mutable?  
 (1) Numbers (2) Strings (3) List  
 (4) Tuple (5) List and Tuple
20. Which of the followings consist iterable objects in “Python”?  
 (1) List, Strings, Numbers (2) List, Tuple, Numbers (3) List, Strings, Set  
 (4) Numbers, Strings, Sets (5) Strings, List, Tuple
21. What is the output of the following “Python” statement respectively?  
`>>>20%3`      `>>>20//3.0`      `>>>20/(9%5)`  
 (1) 2, 6, 5 (2) 2, 6.67, 20 (3) 2, 6.0, 5  
 (4) 6, 6.0, 20 (5) 6, 6, 2
22. Consider the following python statement. Which of the following statement uses range function accurately?  
 A - `>>>range (12)`  
 B - `>>>range (2,10,2)`  
 C - `>>>for i in range (1, 10):`  
     `print (i)`  
 (1) A only. (2) A and B only. (3) A and C only.  
 (4) B and C only. (5) All A,B and C.
23. Consider the given flow chart.

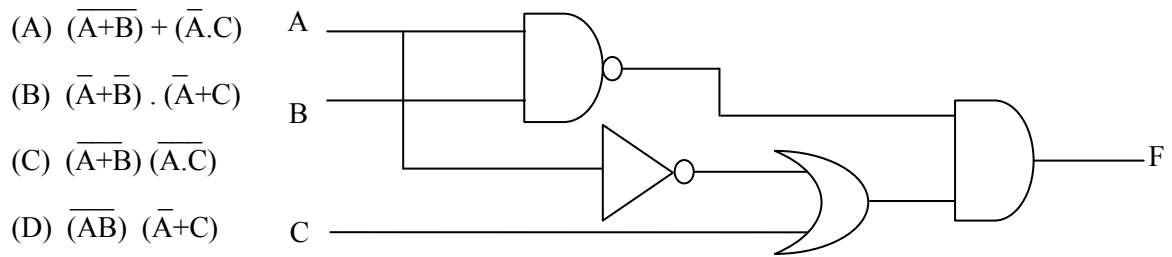


Which of the following statements about the algorithm represented by the flow chart is correct?

- (1) It stops when the user enters a minus value.  
 (2) It displays the message “You are very clever” when the user enters 75.  
 (3) It displays the message “Pay attention towards your studies” when the user enters 30.  
 (4) It stops when the user enters the value 0.  
 (5) It displays the message “Pay attention towards your studies” when the user enters 50.

24. What is the output of Boolean expression  $F(X,Y) = \overline{X.Y}(\overline{X+Y})$  using demorgan theorem?  
 (1) 0 (2) 1 (3) X (4) Y (5) X.Y

25. Which of the following Boolean expression corresponds with the logic circuit given?



- (1) A and B only. (2) A and C only. (3) B and C only.  
 (4) B and D only. (5) All A,C and D.
26. Select the correct SQL statement to output names of student above 15 years of age, grade and marks?  
 (1) SELECT stuName, class, Subjectmarks  
 FROM age>15  
 WHERE Student  
 (2) SELECT stuNO, stuName, class, Subjectmarks  
 WHERE Student  
 FROM age>15  
 (3) SELECT, stuName, class, Subjectmarks  
 WHERE Student  
 From age>15  
 (4) SELECT STName, class, Subjectmarks  
 FROM Student,  
 WHERE age>15  
 (5) SELECT StName, Class, Subjectmarks  
 FROM Student ,  
 WHERE marks>15
27. Select the correct layout corresponding to the following code segment of an HTML document.

```
<ol type="1">
<li>Animals</li>
<ol type="1">
<li>lion</li>
<li>tiger</li>
</ol>
<li>Birds</li>
<ol>
<li>parrot</li>
<li>crow</li>
</ol>
</ol>
```

- (1) 

1.	Animals
•	Lion
•	Tiger
2.	Birds
•	Parrot
•	Crow

- (2) 

•	Animals
○	Lion
○	Tiger
•	Birds
○	Parrot
○	Crow

- (3) 

1.	Animals
i.	Lion
ii.	Tiger
2.	Birds
i.	Parrot
ii.	Crow

- (4) 

1.	Animals
i.	Lion
ii.	Tiger
iii.	Birds
iv.	Parrot
v.	Crow

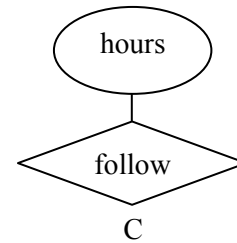
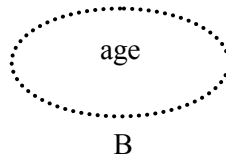
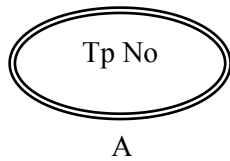
- (5) 

1.0	Animals
1.1	Lion
1.2	Tiger
2.0	Birds
2.1	Parrot
2.2	Crow

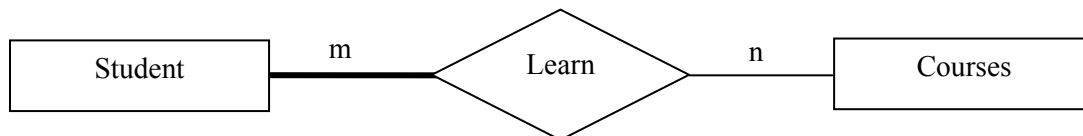
28. Which of the following statement is incorrect?  
 (1) XML is not an alternative to HTML.  
 (2) XML is not depend on hardware or software.  
 (3) XML is a markup language.  
 (4) XML tags are case sensitive.  
 (5) XML is introduced for data storing and transferring.
29. Which one of the following shows the type properties of input elements in form of HTML?  
 (1) radio, text, textarea                      (2) radio, text, checkbox                      (3) checkbox, textbox, textarea  
 (4) select, radio, textarea                      (5) select, radio, textbox
30. What is the correct syntax to be used to insert a JavaScript into an HTML page?  
 (1) <script type = "text/javascript">  
 (2) <type script = "text/javascript">  
 (3) <scripting > = "javascript">  
 (4) <scripting language = "javascript">  
 (5) <scripting language = "text/javascript">
31. Which of the following devices sends data packets only to receiving device?  
 (1) Hub                                              (2) Switch                                              (3) Bridge  
 (4) Repeater                                              (5) Modem
32. Which layers of OSI model connect with networking?  
 (1) Application layer and Presentation layer  
 (2) Session layer and Transport layer  
 (3) Transport layer and Network layer  
 (4) Network layer and Application layer  
 (5) Data link layer and Physical layer
33. Which of the following is a possible IP address in a network with IP address 172.16.10.5 and subnet mask 255.255.248.0  
 (1) 172.16.10.10                                      (2) 172.16.10.5                                      (3) 172.16.8.0  
 (4) 172.16.10.0                                      (5) 172.16.10.16
34. Consider the following statements.  
 A – An operating system is needed to manage Hardware and Software.  
 B – Fedora is a copyrighted operating system.  
 C – Operating systems are type of Application software.  
 Which of the above statements are correct about the operating system?  
 (1) A only.                                              (2) B only.                                              (3) C only.  
 (4) A and B only.                                              (5) B and C only.
35. Consider the following statements.  
 A – Capacity of DVD is higher than CD.  
 B – Data storing in a CD takes place upon pits and bumps.  
 C – Laser beams are used to read CD, DVD and Blu-ray discs.  
 Which of the above statements is/are true?  
 (1) A only.                                              (2) A and B only.                                              (3) A and C only.  
 (4) B and C only.                                              (5) All A, B and C.

36. Consider the following memory types.  
 A - Dynamic Random Access Memory  
 B - Static Random Access Memory  
 C - Read Only Memory  
 D - Cache Memory  
 E - Register memory  
 Which of the above memory /memories is/are non volatile?  
 (1) A only. (2) B only. (3) C only.  
 (4) A and D only. (5) C and E only.
37. Consider the following steps.  
 A - Fetch next instruction.  
 B - Encode the instruction.  
 C - Decode the instruction.  
 D - Execute the instruction.  
 Which of the following steps shows the sequence of the “fetch execution cycle”?  
 (1) A,B and C (2) A,B and D (3) A,C and D  
 (4) B,C and D (5) A,B,C and D
38. Which of the following is not considered as e-business?  
 (1) B2B (2) B2C (3) C2C  
 (4) A2C (5) B2E
39. “An agent who buys and sells for free” in an e - Business is called as,  
 (1) Content provider (2) Information broker (3) Customer  
 (4) Online services provider (5) Store keeper
40. Consider the following terms.  
 A - Waterfall  
 B - Spiral  
 C - Structured  
 D - Unified development  
 E - Object oriented  
 Which of the above represents the system development model?  
 (1) A, B and C only. (2) A, B and D only. (3) A, C and E only.  
 (4) B, C and D only. (5) A, B and E only.
41. A flat file system is created with admission number (Ad\_No), student name (St\_Name), national identity card number (NIC), class (ClassID), name of the class teacher (Class\_Teacher) and number of students in the class (No\_Stu). Which of the following displays the correct relation the second normal form?  
 A - Student (Ad\_No, St\_Name,NIC,ClassID)  
     Classdetail (ClassID,Class\_Teacher,No\_Stu)  
 B - Student (Ad\_No,St\_Name,NIC,ClassID,Class\_Teacher)  
     Classdetail (ClassID,Location)  
 C - Student (Ad\_No,St\_Name,NIC)  
     Classdetail (ClassID,Class\_Teacher,No\_Stu)  
 (1) A only. (2) B only. (3) C only.  
 (4) A and B only. (5) B and C only.

42. Which of the following attributes represented by the following symbols (A, B, and C) in a ER Diagram respectively.



- (1) Simple attribute, Multivalued attribute and Derived attribute  
 (2) Multivalued attribute, Derived attribute) and Descriptive attribute  
 (3) Multivalued attribute, Derived attribute and Composite attribute  
 (4) Composite attribute, Multivalued attribute and Derived attribute  
 (5) Derived attribute, Stored attribute and Derived attribute
43. Which of the following represents the three levels of ANSI SPARC model?  
 (1) External level, Internal level and Complex level  
 (2) Primary level, Secondary level and Tertiary level  
 (3) Logical level, Conceptual level and Physical level  
 (4) External level, Conceptual level and Physical level  
 (5) Primary level, Logical level and Complex level
44. Which of the following database system model in accordance with Parent-Child relationship in data processing?  
 (1) Hierarchical  
 (2) Object oriented  
 (3) Structural  
 (4) Network  
 (5) Relational
45. Identify the candidate key field which is not a primary key field in a database?  
 (1) Foreign key (2) Secondary key (3) Alternate key  
 (4) Key constraint (5) Super key
46. Consider the following ER Diagram and Statements.



- A – Student have full depended relationship and courses have partial dependent.  
 B – Many to Many relationships exist between students and courses.  
 C – Degree of relationship is 2.
- (1) A only. (2) A and B only. (3) A and C only.  
 (4) B and C only. (5) All A, B and C.
47. What is not a main Characteristic of a agent in agent technology?  
 (1) Self execution  
 (2) Intelligence  
 (3) Working in a dynamic environment  
 (4) Advertising  
 (5) Competitive execution with other agents

48. Consider the following Python Statements.

```
height = [6.2, 5.8, 5.2, 6.5, 6.3]
count = len(height)
height.sort ()
for i in range (count-1):
    print (height [i]),',',
```

Which of the following is the output of this program?

- (1) 6.2 (2) 6.2, 5.8, 5.2, 6.5, (3) 6.2, 5.8, 5.2, 6.5, 6.3  
 (4) 5.2, 5.8, 6.2, 6.3, (5) 5.2, 5.8, 6.2, 6.3, 6.5,

49. Consider the following data items.

A – (5, 8, 9)

B – [12, 'xyz', 7.8]

C – {'Course No' : 'C112', 'Course name' : 'programming', no\_stu : 50}

Which of the following is true about the given data items A,B and C?

- (1) Data types are range, list, dictionary respectively.  
 (2) B[1] = 'Nimal' can be used to change as 'Nimal' instead of B 'xyz' in B.  
 (3) A[2] = 15 cannot be used to change values in A.  
 (4) (1) and (2) Statements are correct.  
 (5) (2) and (3) Statements are correct.
50. Which of the following python statement is syntactically correct and display answer after adding numbers from 1 to 10?

- |                                                                                                                                                           |                                                                                                                                                         |                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <p>(1) i = 0<br/>           T = 0<br/>           while (i &lt;= 9) :<br/>             i = i + 1<br/>             T = T + i</p>                            | <p>(2) i = 0<br/>           T = 0<br/>           while (i &lt;= 9) :<br/>             i = i + 1<br/>             T = T + i<br/>             print T</p> | <p>(3) i = 0<br/>           T = 0<br/>           while (i &lt;= 9)<br/>             i = i + 1<br/>             T = T + i</p> |
| <p>(4) i = 0<br/>           T = 0<br/>           while (i &lt;= 9) :<br/>             i = i + 1<br/>             T = T + i<br/>             print (T)</p> | <p>(5) i = 0<br/>           T = 0<br/>           while (i &lt;= 9)<br/>             i = i + 1<br/>             T = T + i<br/>             print (T)</p> |                                                                                                                              |