Please check the examination details below before entering your candidate information

Candidate Name	Class	Section

BLOOM Computer Olympiad (BCO)

Question Paper 2024-25

Class 11

Total Questions: **50+5** (Tie-Breaking Section)

Total Time Allotted : 60 minutes

Total Marks : 60

Instructions

1. There are **50 Multiple Choice Questions** in this booklet having 4 options out of which **ONLY ONE** is correct.
2. There are two sections in the Question Paper; **Section A** having 40 Questions carrying 1 Mark each & **Section B** having 10 Higher Difficulty Order Questions carrying 2 Marks each.
3. All questions are compulsory. There is **NO negative** marking for incorrect answers.
4. Total time allotted to complete the paper is 60 minutes.
5. Please fill in your details in the space provided on this page before attempting the paper.

OMR Sheet Instructions

1. Before starting the paper, fill in all the details in the OMR Sheet.
2. Additional 10 minutes will be provided to fill up the OMR sheet, before the start of the exam.
3. Use HB Pencil to darken the circle of the correct Option in OMR sheet. The correct way to darken the circle in OMR sheet is shown below.

4. Use black or blue ball point pen/HB pencil to fill the information in the OMR sheet. Partially filled OMR sheet will not be checked.
5. Return the OMR sheet to the invigilator after the exam.

CODE#168

Com11

BLOOM CAP
Founded by | arihant

Bloom Computer Olympiad Class 11

Section A (1 Mark)

1. $(1214)_{10}$ = (_____)$_{16}$

(a) A5F (b) 4BE
(c) 6F2 (d) 9A2

2. Which of these parts would interpret a program's instructions to initiate the control operations?

(a) Logic unit (b) Control unit
(c) Storage unit (d) Input

3. A list of various coded instructions is known as:

(a) Flowchart (b) Utility programs
(c) Algorithm (d) Computer program

4. Virtual memory implements the translation of a program address's space to

(a) Virtual addresses (b) Physical addresses
(c) Mapping addresses (d) Page addresses

5. Find the invalid variable among the following:

(a) 1st_string (b) my_string_1
(c) _ (d) num

6. The output of this Python code would be:

```
a = [2, 3, 4, 5]
b = [7, 8, 9, 10]
c = [11, 12, 13]
result = [a[i] + b[i] - c[i] for i in range( len (c))]
print(result)
```

What will be the output of the code?

(a) [-2, -1, 0] (b) [2, 1, 3]
(c) [-2, 0, 1] (d) [-3, -1, -1]

7. The output of this Python code would be:

```
>>> x={1:"X",2:"Y",3:"Z"}
>>> del x
```

(a) the del method does not exist for dictionary
(b) the del would delete the values present in dictionary
(c) the del would delete the entire dictionary
(d) the del would delete all the keys in dictionary

8. Determine the minimised expression of Boolean function.

$F = \overline{X}\,\overline{Z} + \overline{Y}\,\overline{Z} + Y\overline{Z} + XYZ$

(a) $\overline{X}\,\overline{Y} + Z$ (b) $\overline{Z} + XY$
(c) $\overline{X}\,Y + Z$ (d) XYZ

9. Which set of rules is applicable for exchange of files over the Internet?

(a) FTP/IP (b) HTTP
(c) HTML (d) HYPER LINK

10. What is the CPU's section that interprets, selects, and also sees to a program instructions' execution?

(a) Register unit (b) Control unit
(c) ALU (d) Memory

11. Consider the following Python code snippet:

```
x = 10
y = 5
z = x * y // x - y % x
```

What will be the value of the variable z after executing this code?

(a) 5 (b) 0
(c) 10 (d) -5

12. Consider the following Python code snippet:

```
data = {'A': 10, 'B': 20, 'C': 30}
keys = ['B', 'A', 'D']
result = {key: data.get(key, 0) for key in keys}
print(result)
```

What will be the output of the code snippet?

(a) {'B': 20, 'A': 10, 'D': 0}
(b) {'B': 10, 'A': 10, 'D': '0'}
(c) {'B': 20, 'A': 10, 'D': None}
(d) {'B': '20', 'A': '20', 'D': '0'}

13. What will be the output of the following code:

```
for i in range(0):
    print(i)
```

(a) 0 (b) No Output
(c) Error (d) None of these

14. Which of the following is used to uniquely identify a process?

(a) Process Control Block (PCB)
(b) Program Counter
(c) PID (Process Identifier)
(d) None of the above

15. Arrange the stages of the problem- solving process in the correct order.

A. Analyzing the problem
B. Developing an algorithm
C. Testing and debugging
D. Coding

Choose the correct answer from the options given below:

(a) A, B, C, D (b) A, C, B, D
(c) A, D, C, B (d) A, B, D, C

16. Which of these output devices are used for the translation of information from any computer into a pictorial form on the papers?

(a) Card punch (b) Touch panel
(c) Plotter (d) Mouse

17. Solve the following Boolean expression.

$Y = A(\overline{A} + C)(\overline{A}B + C)(\overline{A}BC + \overline{C})$

(a) 0 (b) A+B
(c) $\overline{A}$ + BC (d) 1

18. What is multitasking in operating systems?

(a) Running multiple processes simultaneously
(b) Running a single process
(c) Using multiple processors
(d) None of the above

19. The output of this Python code would be:

```
print("mno. PQR".capitalize())
```

(a) Mno. Pqr (b) Mno. pqr
(c) MNO. PQR (d) mno. pqr

20. Consider the following Python code snippet:

```
t = (1, 2, [3, 4], 5)
t[2].append(6)
t[1] = 7
t[0] = 8
```

Which of the following statements is true after executing the code snippet?

(a) t will be (8, 7, [3, 4, 6], 5)
(b) t will be (1, 7, [3, 4, 6], 5)
(c) t will be (1, 2, [3, 4, 6], 5)
(d) The code will raise a TypeError due to an attempt to modify a tuple.

21. _____ helps to increase the signal when it became weak and distorted.

(a) Repeater (b) Router
(c) Hub (d) Switch

22. What access method do we use to obtain any record out of a cassette tape?

(a) Random (b) Direct
(c) Sequential (d) All of these

23. In _____ all the devices are connected through a central controller called hub.

(a) Ring Topology (b) Tree Topology
(c) Star Topology (d) Mesh Topology

24. Exploring appropriate and ethical behaviors related to online environments and digital media.

(a) Cyber ethics (b) Cyber security
(c) Cyber safety (d) Cyber law

25. How can you update the values of formula cells if Auto Calculate mode of Excel is disabled?

(a) F8 (b) F9
(c) F10 (d) F11

26. What is meant by the concept of WYSIWYG in MS Word?

(a) What You See Is What You Get
(b) What You Seek Is What You Get
(c) What You See Is What You Give
(d) What You Seek Is What You Give

27. Random scan systems are used for -

(a) Color drawing application
(b) Pixel drawing application
(c) Line drawing application
(d) None of the above

28. The data taken from a digital footprint can be used for

(a) Hacking
(b) Only for feedback
(c) Showing relevant ads
(d) All of the above

29. What will be the output of the below Python code?

```
str123="12/7"
print("str123")
```

(a) 12/7 (b) 1.7
(c) 1 (d) str123

30. Internet Protocol version 6(IPv6) was developed by _____

(a) Internet Engineering Task Force
(b) Internet Technical Society
(c) Internet Development Task Force
(d) Internet Society

31. What is the value of y after evaluating the following expressions?

```
x = 5
y = x++ + ++x - x-- x
```

(a) 10 (b) 5
(c) 7 (d) 8

32. _____ is a computer that has been designed so that it is as compact as possible.

(a) Supercomputer (b) Mini
(c) Mainframe (d) Microcomputer

33. Which of the following activities fool the victim by convincing them that the site is real and legitimate by spoofing or looking almost identical to the actual site?

(a) Eavesdropping
(b) Phishing
(c) Pharming
(d) Intrusion

34. What is the purpose of the kernel in an operating system?

(a) To manage the system's resources
(b) To provide a user interface
(c) To manage files
(d) To manage the network

35. _____ is the computer program that would convert an assembly language to the machine language.

(a) Interpreter (b) Compiler
(c) Comparator (d) Assembler

36. How to make a true copy of list L1?

(a) L2=L1 (b) L2= list(L1)
(c) L2.copy(L1) (d) not possible

37. Study the following statement:

```
>>>x = "a"+"bc"+"12"
```

What will be the output of this statement?

(a) a+bc (b) abc
(c) abc12 (d) 12

38. Which of the following is used in Main Memory?

(a) DDR (b) DRAM
(c) SRAM (d) PRAM

39. What is a deadlock in operating systems?

(a) A situation where a process is stuck in an infinite loop
(b) A situation where two or more processes are unable to proceed because each is waiting for the other to release a resource
(c) A situation where the operating system crashes
(d) None of the above

40. _____ is used to reduce the size of multimedia files.

(a) Data handling (b) Data coupling
(c) Data compression (d) Data dependency

Section B (2 Marks)

41. In Python, when using a module that doesn't define any functions, which of the following statements about module attributes is incorrect?

(a) Module attributes can be accessed using dot notation, e.g., module_name.attribute_name.
(b) Module attributes are defined at the top level of the module and can be constants, variables, or objects.

(c) If a module does not explicitly define an attribute, trying to access it will raise an ImportError.

(d) Modules without functions can still execute code at import time, and this code can define module-level attributes.

42. Consider the following Python code snippet:

```
x = 0
y = 5
z = 10
while x < y:
    if z % 2 == 0:
        x += 2
        y -= 1
    else:
        x += 1
        y -= 2
    z -= 1
print(x, y, z)
```

What will be the output of the above code snippet?

(a) 3 2 8 (b) 4 2 5

(c) 3 3 3 (d) 3 1 6

43. Consider the following Python code snippet:

```
s = "pythonprogramming"
result = ""
for i in range(len(s)):
    if i % 2 == 0:
        result += s[i]
    else:
        result = s[i] + result
print(result)
```

What will be the output of the above code?

(a) pynorormgmithpgam

(b) nimmargorpnohtypg

(c) nmagrnhyptopormig

(d) pgmtrghyimnopryot

44. Consider the following Python code snippet:

```
s = "DataScience2024"
result = ""
for i in range(len(s)):
    if (i % 2 == 0) and ('A' <= s[i] <= 'Z'):
        result += chr(ord(s[i]) + 32)
    elif (i % 2 != 0) and ('a' <= s[i] <= 'z'):
        result += chr(ord(s[i]) - 32)
    else:
        result += s[i]
print(result)
```

(a) dAtAsCiEnCe2024 (b) DAtAsCIENce2024

(c) DAtAscIENce2024 (d) DAtAsCieNCe2024

45. **Assertion (A)** Python modules are stored in files with a ".py" extension, and they allow you to logically organize your Python code.

Reason (R) The ".py" extension is commonly used for Python code files, and modules provide a way to organize code by grouping related functions, classes, and variables together.

(a) Both (A) and (R) are true and (R) is the correct explanation of (A)

(b) Both (A) and (R) are true but (R) is not the correct explanation of (A)

(c) (A) is true, but (R) is false

(d) (A) is false, but (R) is true

46. What gets printed with the following code?

```
x = True
y = False
z = False
if x or y and z :
  print("yes")
else:
  print("no")
```

(a) False (b) True

(c) yes (d) no

47. Match the following:

Icon	Meaning
A. 	I. Bring Forward
B. 	II. Wrap Text
C. 	III. Send Backward
D. 	IV. Position

(a) A – I, B – II, C – III, D – IV

(b) A – III, B – I, C – IV, D – II

(c) A – IV, B – III, C – II, D – I

(d) A – II, B – I, C – IV, D – III

48. In the context of Python lists, choose the correct statements:

Statement 1 You can add an item to a list using the append() method.

Statement 2 You can remove an item from a list using the delete() method.

Statement 3 The len() function returns the length of elements of a list.

(a) Statement 1

(b) Statement 3

(c) Both Statements 1 and 3

(d) None of the above

49. Consider the following code snippet:

```
data = {
    'A': [1, 2, 3],
    'B': [4, 5, 6],
    'C': [7, 8, 9]
}
result = [data['A'][1], data['B'][-2],
data['C'][0] + data['B'][2]]
print(result)
```

What will be the value of the result list after the code is executed?

(a) [2, 5, 13] (b) [2, 5, 10]

(c) [1, 4, 13] (d) [3, 6, 16]

50. Choose the incorrect statement out of the given statements:

I. Square brackets can be used to access elements of the string.

II. To check if a certain phrase or character is present in a string, we can use the keyword in.

III. Slicing in a String is done by using a Slicing operator.

IV. Strings in Python are mutable, meaning they can be modified after creation.

(a) Only I

(b) Only IV

(c) II and III

(d) I and IV

Tie-Breaking Section

Instructions

1. This section consists of 5 questions.
2. The score achieved in this section will not be included in the total marks.
3. If overall marks of two or more students are same, winner will be decided based on the score in this section.
4. Participation in this section is optional and students may choose to attempt it or not.

1. Match the following lists.

	List I.		List II
A.	Whaling	1.	Vishing
B.	Voice + phishing	2.	Year 1995
C.	Email phishing	3.	Tracking the user's online activities like search queries.
D.	Tracking cookies	4.	A type of phishing

Codes

	A	B	C	D
(a)	4	3	1	2
(b)	2	1	4	3
(c)	4	1	2	3
(d)	3	2	1	4

2. Identify correct statements related to Banker's algorithm.

I. Banker's algorithm is used to prevent a deadlock.

II. Banker's algorithm is used to solve the deadlock.

(a) Only I

(b) Only II

(c) Both I and II

(d) Neither I nor II

3. Identify the incorrect statement(s) from the following.

I. 'If and else' tests a condition and according to condition on it.

II. Break is used to break the execution of a loop.

III. For will execute a loop a fixed number of times.

IV. Break will execute a loop while a condition is true.

Codes

(a) II and III (b) III and IV

(c) Only I (d) Only IV

4. Which of the following statement(s) is/are correct regarding XOR gate?

I. Ping stands for Packet Internet Generator.

II. The ping command checks the port level connectivity between source destinations end points.

III. Ping summarizes the packet loss and round-trip delay between two IP end points.

(a) I and II (b) II and III

(c) I, II and III (d) Only III

5. Which statements are correct regarding IDL?

I. It is also called Interface Definition Language.

II. It is used to establish communications between clients and servers in RPC (Remote Procedure Call).

(a) Only I

(b) Only II

(c) Both I and II

(d) Neither I nor II