

Class 10 · Computer Science Olympiad

Total questions 50	Total marks 60	Time 60 minutes	Negative marking None
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Each question has four options, of which only one is correct. Mark your answer on the answer sheet. The Achievers Section carries higher marks per question. The answer key with full solutions is at the end of this paper.

This is original practice material written to the Level 1 pattern. It is not a past paper and is not affiliated with SOF or any official olympiad body.

Logical Reasoning

10 questions · 1 mark each · 10 marks

Q1. Cow : Calf :: Dog : ____

- (A) Cub (B) Kitten (C) Puppy (D) Foal

Q2. Count backward in 2s: 24, 22, 20, 18, ____

- (A) 17 (B) 14 (C) 16 (D) 18

Q3. Which letter comes next? A, C, F, J, ____

- (A) N (B) P (C) O (D) M

Q4. Read the statements and choose the conclusion that **MUST** be true.

All metals conduct electricity. Copper is a metal.

- (A) Only copper is a metal. (B) Copper does not conduct electricity.
(C) All conductors are copper. (D) Copper conducts electricity.

Q5. 8 : 64 :: 10 : ____

- (A) 100 (B) 121 (C) 20 (D) 81

Q6. Pointing to a boy in a photograph, Meera said, "He is the son of my paternal grandfather's only son." How is the boy related to Meera?

- (A) Cousin (B) Nephew (C) Uncle (D) Brother

Q7. In a certain code JAR is written as LCT. How is PEN written in that code?

- (A) NCL (B) SHQ (C) PGR (D) RGP

Q8. If the 15th of a month is a Monday, what day of the week is the 28th of the same month?

- (A) Monday (B) Tuesday (C) Sunday (D) Saturday

Q9. Find the next number in the pattern: 22, 34, 46, 58, ____

- (A) 70 (B) 82 (C) 58 (D) 71

Q10. Sima walks 8 m north, then 6 m east, then 7 m south. Where is Sima now, relative to the starting point?

- (A) 2 m north and 6 m east (B) 1 m north and 7 m east
(C) 1 m north and 6 m east (D) 8 m north and 6 m east

Computer Science

30 questions · 1 mark each · 30 marks

- Q11. Which of these is a programming language?
(A) Python (B) Windows (C) Notepad (D) Firefox
- Q12. What is a bug in a program?
(A) A mistake that makes it behave wrongly (B) A kind of printer
(C) A small insect inside the computer (D) A type of cable
- Q13. Which shortcut undoes the last action?
(A) Ctrl + Z (B) Ctrl + A (C) Ctrl + B (D) Ctrl + Y
- Q14. Which of these files is most likely a picture?
(A) song.mp3 (B) notes.txt (C) photo.jpg (D) movie.mp4
- Q15. In a flowchart, which shape is used for a decision?
(A) An oval (B) A circle (C) A diamond (D) A rectangle
- Q16. What is antivirus software for?
(A) To find and remove harmful programs (B) To print in colour
(C) To type faster (D) To make the screen brighter
- Q17. What does RAM stand for?
(A) Run All Memory (B) Rapid Access Machine
(C) Read Any Memory (D) Random Access Memory
- Q18. Which of these is an example of hardware?
(A) An operating system (B) A song file
(C) A printer (D) A web page
- Q19. Which number system does a computer use internally?
(A) Binary (B) Decimal (C) Roman (D) Octal
- Q20. What does CPU stand for?
(A) Central Program Utility (B) Control Panel Unit
(C) Computer Printing Unit (D) Central Processing Unit
- Q21. What is the shortcut normally used to copy selected text?
(A) Ctrl + X (B) Ctrl + C (C) Ctrl + P (D) Ctrl + V
- Q22. What should you do with a password?
(A) Keep it secret (B) Use your name as password
(C) Tell your whole class (D) Write it on the desk
- Q23. What is a computer virus?
(A) A harmful program that can damage files (B) A broken wire inside the computer
(C) A germ that makes the user ill (D) A type of printer
- Q24. Which shortcut is normally used to save your work?
(A) Ctrl + O (B) Ctrl + S (C) Ctrl + N (D) Ctrl + P

- Q25. Which of these is an operating system?
(A) Photoshop (B) Chrome (C) Excel (D) Linux
- Q26. What does "debugging" mean?
(A) Deleting the program (B) Renaming the program
(C) Printing the program (D) Finding and fixing errors in a program
- Q27. Which of these is the safest password?
(A) myname (B) Ra1n@Kolkata#27
(C) 123456 (D) password
- Q28. Which shortcut is normally used to print?
(A) Ctrl + S (B) Ctrl + P (C) Ctrl + F (D) Ctrl + D
- Q29. Which memory loses all its contents when the computer is switched off?
(A) RAM (B) Pen drive (C) ROM (D) Hard disk
- Q30. In a spreadsheet, what usually appears at the start of a formula?
(A) A full stop (B) A question mark
(C) A hyphen (D) An equals sign
- Q31. What is a file extension such as .txt or .jpg used for?
(A) To show what kind of file it is (B) To print the file
(C) To make the file smaller (D) To lock the file
- Q32. Which of these files is most likely a song?
(A) page.html (B) notes.txt (C) song.mp3 (D) photo.jpg
- Q33. What does WWW stand for?
(A) Wide World Web (B) World Wired Web
(C) Web World Wide (D) World Wide Web
- Q34. Which part of a computer carries out calculations?
(A) The CPU (B) The printer (C) The monitor (D) The keyboard
- Q35. In programming, what is a loop used for?
(A) To repeat a set of instructions (B) To delete a file
(C) To stop the program (D) To print a document
- Q36. What does a modem or router mainly help you do?
(A) Store photos (B) Connect to the internet
(C) Print in colour (D) Cool the computer
- Q37. Which of these is a web browser?
(A) Android (B) Firefox (C) Windows (D) Linux
- Q38. What is the output of the instruction: `print(2 + 3 * 4)`?
(A) 9 (B) 14 (C) 24 (D) 20

Q39. What is an algorithm?

- (A) A step-by-step method to solve a problem
- (B) A storage device
- (C) A kind of computer screen
- (D) A type of virus

Q40. In programming, what does a variable do?

- (A) It deletes a file
- (B) It connects to wifi
- (C) It prints the screen
- (D) It stores a value that can change

AI, Robotics and Information Technology

5 questions · 1 mark each · 5 marks

Q41. What does a scanner do?

- (A) It prints a page
- (B) It plays sound
- (C) It copies a printed page into the computer
- (D) It charges the battery

Q42. Which device stores photos taken on a phone?

- (A) The phone's screen
- (B) The phone's speaker
- (C) The phone's memory
- (D) The phone's charger

Q43. Which of these is a search engine?

- (A) Google
- (B) Paint
- (C) Word
- (D) Excel

Q44. A computer program that answers questions in ordinary language is an example of:

- (A) A spreadsheet
- (B) A printer driver
- (C) A screensaver
- (D) Artificial Intelligence

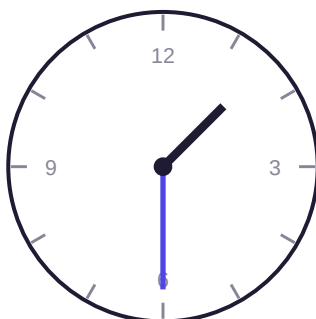
Q45. Which of these is an example of a smart device?

- (A) A fitness band that counts steps
- (B) A pencil
- (C) A paper notebook
- (D) A wooden ruler

Achievers Section

5 questions · 3 marks each · 15 marks

Q46. The clock in the figure shows 1:30. What is the angle between the hour hand and the minute hand?

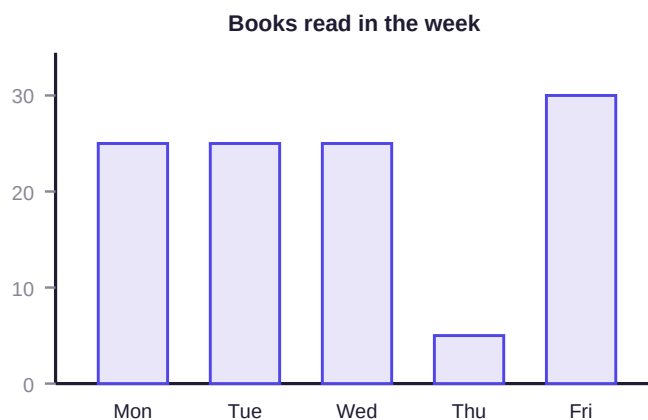


- (A) 165°
- (B) 150°
- (C) 135°
- (D) 120°

Q47. How many numbers between 40 and 70 leave a remainder of 5 when divided by 7?

- (A) 3 (B) 5 (C) 6 (D) 4

Q48. The bar graph shows the number of books read by a class on each day of one week. How many books were read in the whole week?



- (A) 115 (B) 120 (C) 110 (D) 105

Q49. The average of 3 numbers is 34. 2 of them are 58, 1. What is the remaining number?

- (A) 45 (B) 43 (C) 34 (D) 41

Q50. Using each of the digits 6, 0, 7, 2 exactly once, what is the smallest 4-digit number that can be formed?

- (A) 0267 (B) 7620 (C) 2076 (D) 2067

Answer Key

1	2	3	4	5	6	7	8	9	10
C	C	C	D	A	D	D	C	A	C
11	12	13	14	15	16	17	18	19	20
A	A	A	C	C	A	D	C	A	D
21	22	23	24	25	26	27	28	29	30
B	A	A	B	D	D	B	B	A	D
31	32	33	34	35	36	37	38	39	40
A	C	D	A	A	B	B	B	A	D
41	42	43	44	45	46	47	48	49	50
C	C	A	D	A	C	D	C	B	D

Solutions

Q1. (C) The second word relates to the first in the same way Puppy relates to Dog.

Q2. (C) Subtracting 2 from 18 gives 16.

Q3. (C) The gaps grow by one each time (+2, +3, +4, +5), so after J the next letter is O.

Q4. (D) From "All metals conduct electricity. Copper is a metal." it follows necessarily that copper conducts electricity.

- Q5. (A) The second number is the first multiplied by itself: $8 \times 8 = 64$, so $10 \times 10 = 100$.
- Q6. (D) Meera's paternal grandfather's only son is Meera's own father, so that man's son is Meera's own sibling. The answer is Brother.
- Q7. (D) Each letter moves 2 place(s) forward in the alphabet, so PEN becomes RGP.
- Q8. (C) 13 days later is 1 week(s) and 6 day(s), so the day moves 6 place(s) on from Monday to Sunday.
- Q9. (A) Each number is 12 more than the one before it, so the next is $58 + 12 = 70$.
- Q10. (C) The 7 m south cancels part of the 8 m north, leaving $8 - 7 = 1$ m north, and the 6 m east is unchanged. So Sima is 1 m north and 6 m east.
- Q11. (A) Python is a programming language; the others are programs or an operating system.
- Q12. (A) A bug is an error in the program. The answer is A mistake that makes it behave wrongly.
- Q13. (A) Ctrl + Z undoes the last action.
- Q14. (C) A .jpg file is an image; .txt is text, .mp3 is audio and .mp4 is video. The answer is photo.jpg.
- Q15. (C) A diamond marks a decision; a rectangle is a process and an oval is start or stop.
- Q16. (A) Antivirus software detects and removes malicious programs. The answer is To find and remove harmful programs.
- Q17. (D) RAM is Random Access Memory, the temporary working memory of a computer.
- Q18. (C) Hardware is a physical part, like a printer.
- Q19. (A) Computers work in binary, using only the digits 0 and 1.
- Q20. (D) CPU stands for Central Processing Unit.
- Q21. (B) Ctrl + C copies, Ctrl + X cuts and Ctrl + V pastes.
- Q22. (A) A password must be kept secret, or anyone can use your account. The answer is Keep it secret.
- Q23. (A) A virus is a malicious program; it cannot make a person ill. The answer is A harmful program that can damage files.
- Q24. (B) Ctrl + S saves the current file.
- Q25. (D) Linux is an operating system; the others are application programs.
- Q26. (D) Debugging is locating and fixing mistakes in code. The answer is Finding and fixing errors in a program.
- Q27. (B) A strong password mixes capitals, small letters, digits and symbols and is hard to guess. The answer is Ra1n@Kolkata#27.
- Q28. (B) Ctrl + P opens the print dialog.
- Q29. (A) RAM is volatile: its contents disappear when the power goes off.
- Q30. (D) Spreadsheet formulas normally begin with = . The answer is An equals sign.
- Q31. (A) The extension tells the computer and the user what type of file it is. The answer is To show what kind of file it is.
- Q32. (C) An .mp3 file holds audio. The answer is song.mp3.
- Q33. (D) WWW stands for World Wide Web.
- Q34. (A) The CPU performs the calculations and processing.
- Q35. (A) A loop repeats instructions until a condition is met. The answer is To repeat a set of instructions.
- Q36. (B) A modem or router connects your devices to the internet. The answer is Connect to the internet.
- Q37. (B) Firefox is a web browser; the others are operating systems.
- Q38. (B) Multiplication happens before addition: $3 \times 4 = 12$, then $2 + 12 = 14$.
- Q39. (A) An algorithm is an ordered set of steps that solves a problem. The answer is A step-by-step method to solve a problem.
- Q40. (D) A variable is a named place in memory holding a value that can change. The answer is It stores a value that can change.

- Q41. (C) A scanner turns a paper document into a digital image, so it is an input device. The answer is It copies a printed page into the computer.
- Q42. (C) Photos are saved in the phone's memory or storage.
- Q43. (A) A search engine such as Google finds pages on the web.
- Q44. (D) Understanding and answering ordinary language is an AI task. The answer is Artificial Intelligence.
- Q45. (A) A smart device has sensors and a small computer inside, like a fitness band. The answer is A fitness band that counts steps.
- Q46. (C) The minute hand is at 180° from 12 and the hour hand at 45° from 12, so the angle between them is 135° .
- Q47. (D) The numbers are 47, 54, 61, 68 — 4 of them.
- Q48. (C) $25 + 25 + 25 + 5 + 30 = 110$ books.
- Q49. (B) The 3 numbers add up to $34 \times 3 = 102$. The given numbers add up to 59, so the missing number is $102 - 59 = 43$.
- Q50. (D) A 4-digit number cannot begin with 0, so the smallest possible first digit is 2. The remaining digits are then placed in increasing order: 2067.

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