



OFFICE OF THE ENGINEER-IN-CHIEF
PUBLIC HEALTH ENGINEERING DEPARTMENT
AIZAWL : MIZORAM

WRITTEN EXAMINATION
(Advertisement No.3 of 2025)

FOR THE POST OF

ANALYST (LAB)
(Regular)

PAPER-II

Code No: _____
(For Official Use)

Signature of Invigilator

SUBJECT (Part)	MARKS OBTAINED
Part-A Simple Arithmetic (50x2=100 marks)	
Part-B Basic Computer Knowledge (50x2=100 marks)	
Total Marks obtained (Full Marks-200)	

Signature of Examiner



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(To be filled in by Candidate)

Signature of Candidate

Signature of Invigilator

Instructions:

1. The question paper will also serve as the answer sheet. Candidates are required to answer Parts A, B, directly on the question/answer sheet using Tick (✓) Marks.
2. Time : 3 Hours

PART-A
SIMPLE ARITHMETIC (50X2=100 Marks)

1. The LCM and HCF of 2 numbers are 168 and 6 respectively, if one of the numbers is 24, Find the others.
(a) 36 ☐ (b) 38 ☐
(c) 40 ☐ (d) 42 ☐
2. Four bells ring simultaneously at starting and an interval of 6 sec, 12 sec, 15 sec and 20 sec respectively. How many times they ring together in 2 hours?
(a) 120 ☐ (b) 60 ☐
(c) 121 ☐ (d) 112 ☐
3. Simplify : $(81.84 + 118.16) \div 5^3 = 1.2 \times 2 + ?$
(a) 0.8 ☐ (b) -0.8 ☐
(c) 0.6 ☐ (d) -0.6 ☐
4. Find the value of 'x' : $2^3 \times 3^4 \times 1080 \div 15 = 6^x$
(a) 4 ☐ (b) 8 ☐
(c) 2 ☐ (d) 6 ☐
5. What will be the value of k, if the roots of the equation $(k - 4)x^2 - 2kx + (k + 5) = 0$ are equal?
(a) 18 ☐ (b) 20 ☐
(c) 22 ☐ (d) 19 ☐
6. What will be the value of a, for which the equation ' $5x^2 + ax + 5$ and $x^2 - 12x + a$ ' will have real roots?
(a) $a=37$ ☐ (b) $36 < a < 10$ ☐
(c) $10 < a < 36$ ☐ (d) $a = 9$ ☐
7. Half percent, written as a decimal, is
(a) 0.2 ☐ (b) 0.05 ☐
(c) 0.005 ☐ (d) 0.02 ☐
8. 220% of a number 'X' is 44, what is 44% of 'X'?
(a) 8.8 ☐ (b) 8.9 ☐
(c) 6.6 ☐ (d) 7.7 ☐
9. The profit on selling 15 articles is equal to the cost price of 2 articles. Find the profit percentage.
(a) 11.11% ☐ (b) 12.22% ☐
(c) 13.33% ☐ (d) 14.44% ☐
10. The total of the selling and the cost price is 1250. If the profit is 35%, find the selling price.
(a) 718 Rupees ☐ (b) 798 Rupees ☐
(c) 790 Rupees ☐ (d) 789 Rupees ☐
11. A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3. If C gets Rs. 1000 more than D, what is B's share?
(a)Rs. 500 ☐ (b) Rs. 1500 ☐
(c) Rs. 2000 ☐ (d) Rs. 1200 ☐
12. If 40% of a number is equal to two-third of another number, what is the ratio of first number to the second number?
(a) 2:5 ☐ (b) 3:7 ☐
(c) 5:3 ☐ (d) 7:3 ☐

13. A began a business with Rs. 85,000. He was joined afterwards by B with Rs. 42,500. For how much period does B join, if the profits at the end of the year are divided in the ratio of 3 : 1?
 (a) 4 months ☐ (b) 5 months ☐
 (c) 6 months ☐ (d) 8 months ☐
14. A starts business with Rs. 3500 and after 5 months, B joins with A as his partner. After a year, the profit is divided in the ratio 2 : 3. What is B's contribution in the capital?
 (a) Rs. 7500 ☐ (b) Rs. 8000 ☐
 (c) Rs. 8500 ☐ (d) Rs. 9000 ☐
15. 39 persons can repair a road in 12 days, working 5 hours a day. In how many days will 30 persons, working 6 hours a day, complete the work?
 (a) 10 ☐ (b) 13 ☐
 (c) 14 ☐ (d) 15 ☐
16. 36 men can complete a piece of work in 18 days. In how many days will 27 men complete the same work?
 (a) 12 ☐ (b) 18 ☐
 (c) 22 ☐ (d) 24 ☐
17. 13 men can do a piece of work in 78 days. Find the time taken by 26 men to complete the same work.
 (a) 78 days ☐ (b) 39 days ☐
 (c) 13 days ☐ (d) 19 days ☐
18. While going to office, Mawia travels at a speed of 30 kmph and on his way back, he travels at a speed of 45 kmph. What is his average speed of the whole journey?
 (a) 45 kmph ☐ (b) 36 kmph ☐
 (c) 32 kmph ☐ (d) 42 kmph ☐
19. Two stations B and M are 465 km distant. A train starts from B towards M at 10 AM with a speed of 65 km/hr. Another train leaves from M towards B at 11 AM at a speed of 35 km/hr. Find the time when both trains meet.
 (a) 5 pm ☐ (b) 2 pm ☐
 (c) 3 pm ☐ (d) 4 pm ☐
20. A man riding his bicycle covers 150 metres in 25 seconds. What is his speed in km per hour ?
 (a) 20 kmph ☐ (b) 25 kmph ☐
 (c) 21.6 kmph ☐ (d) 23 kmph ☐
21. The compound interest on a certain sum for 2 years at 10% per annum is Rs. 525. The simple interest on the same sum for double the time at half the rate percent per annum is:
 (a) Rs. 400 ☐ (b) Rs. 500 ☐
 (c) Rs. 600 ☐ (d) Rs. 800 ☐
22. What will be the amount a man would get, if he invests Rs. 10,000 at 9% per annum simple interest for 3 years?
 (a) Rs 11,500 ☐ (b) Rs 12,200 ☐
 (c) Rs 11,800 ☐ (d) Rs 12,700 ☐
23. The Area of trapezium is 800m². The lengths of the parallel sides is 28m and 12m. Find the height of the trapezium.
 (a) 22m ☐ (b) 42m ☐
 (c) 40m ☐ (d) 20m ☐
24. The height of a closed cylinder of given volume and the minimum surface area is-
 (a) Equal to its diameter ☐ (b) Half to its diameter ☐
 (c) Tripple to its diameter ☐ (d) Double to its diameter ☐

25. In how many ways can a group of 5 men and 2 women be made out of a total of 7 men and 3 women?
- (a) 63 ☐ (b) 90 ☐
(c) 45 ☐ (d) 126 ☐
26. In how many different ways can the letters of the word 'DETAIL' be arranged in such a way that the vowels occupy only the odd positions?
- (a) 32 ☐ (b) 48 ☐
(c) 36 ☐ (d) 60 ☐
27. In how many ways can the letters of the word 'LEADER' be arranged?
- (a) 72 ☐ (b) 144 ☐
(c) 720 ☐ (d) 360 ☐
28. From a point P on a level ground, the angle of elevation of the top tower is 30° . If the tower is 100 m high, the distance of point P from the foot of the tower is:
- (a) 149m ☐ (b) 156m ☐
(c) 173m ☐ (d) 200m ☐
29. The line drawn from the eye of an observer to the point in the object viewed by the observer is said to be
- (a) Angle of Elevation ☐ (b) Angle of depression ☐
(c) Line of Sight ☐ (d) Centre of Curvature ☐
30. The angle of elevation of the top of a tower is 30° . If the height of the tower is doubled, then the angle of elevation of its top will be
- (a) Greater than 60° ☐ (b) Equal to 30° ☐
(c) Equal to 60° ☐ (d) Less than 60° ☐
31. A _____ is a bar graph that shows data in intervals.
- (a) Bar Graph ☐ (b) Pie chart ☐
(c) Histogram ☐ (d) Line Graph ☐
32. Which point lies only on y-axis?
- (a) (0, -2) ☐ (b) (2, 0) ☐
(c) (-2, 0) ☐ (d) (2, -2) ☐
33. Study the table and find the percentage contribution of c's age in the total weight.
- | | A | B | C | D | E | F | G | H | I |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Age | 20 | 25 | 34 | 43 | 23 | 25 | 27 | 36 | 33 |
| Weight | 66 | 67 | 76 | 78 | 68 | 86 | 57 | 75 | 67 |
| Height | 143 | 141 | 145 | 142 | 147 | 149 | 152 | 139 | 140 |
- (a) 12.66% ☐ (b) 12.68% ☐
(c) 12.75% ☐ (d) 12.7 ☐
34. Which of the following is a prime number?
- (a) 571 ☐ (b) 559 ☐
(c) 517 ☐ (d) 533 ☐
35. The sum of three numbers is 98. If the ratio of the first to second is 2 :3 and that of the second to the third is 5 : 8, then the second number is:
- (a) 20 ☐ (b) 30 ☐
(c) 48 ☐ (d) 58 ☐
36. The point (0,0) lies at:
- (a) x-axis ☐ (b) z-axis ☐
(c) y-axis ☐ (d) origin ☐
37. 5 to 2 is the same as 3 to:
- (a) 3.333 ☐ (b) 7.5 ☐
(c) 5 ☐ (d) 1.2 ☐

38. How many folding chairs do you need to rent if the 65 people you invited are each bringing 4 guests?
- (a) 340 ☐ (b) 300 ☐
(c) 325 ☐ (d) 225 ☐
39. If 5.5 is x percent of 55, what is x percent of 10?
- (a) 1 ☐ (b) 0.55 ☐
(c) 10 ☐ (d) 0.1 ☐
40. If a water level starts at 6 feet, and rises 2 inches per hour, how deep will it be in 6 hours?
- (a) 8 ft ☐ (b) 6.6 ft ☐
(c) 7 ft ☐ (d) 6 ft ☐
41. If $x^4 + x - 4 = 47$, $x > 0$, then the value of $(2x - 3)^2$ is:
- (a) 9 ☐ (b) 5 ☐
(c) 3 ☐ (d) 7 ☐
42. If the difference between the compound interest compounded annually and the simple interest on a certain sum of money for three years at 10% per annum Rs.279, then the sum (in Rs.) is:
- (a) 10,000 ☐ (b) 9000 ☐
(c) 8000 ☐ (d) 7500 ☐
43. If $71^{83} + 73^{83}$ is divided by 36, the remainder is:
- (a) 13 ☐ (b) 9 ☐
(c) 0 ☐ (d) 8 ☐
44. Two numbers A and B are in the ratio 13 : 17. If A is increased by 15% and B is increased by 30%, then the new ratio of A to B will be:
- (a) 21 : 31 ☐ (b) 23 : 33 ☐
(c) 23 : 34 ☐ (d) 21 : 29 ☐
45. If $x + 2y = 19$ and $x^3 + 8y^3 = 361$, then xy is equal to:
- (a) 54 ☐ (b) 55 ☐
(c) 56 ☐ (d) 57 ☐
46. One dozen notebooks quoted at 125 are available at 20% discount. How many notebooks can be bought for 75 ?
- (a) 9 ☐ (b) 8 ☐
(c) 10 ☐ (d) 6 ☐
47. The perimeters of two similar triangles ABC and PQR are 156 cm and 46.8 cm respectively. If $BC = 19.5$ cm and $QR = x$ cm, then the value of x is:
- (a) 3.76 cm ☐ (b) 5.85 cm ☐
(c) 4.29 cm ☐ (d) 6.75 cm ☐
48. A can complete one-sixth of a work in 5 days and B can complete one-fourth of the same work in 15 days. In how many days, will both working together complete the work?
- (a) 20 days ☐ (b) 30 days ☐
(c) 25 days ☐ (d) 10 days ☐
49. If $3x + y = 12$ and $xy = 9$, then the value of $(3x - y)$ is:
- (a) 5 ☐ (b) 6 ☐
(c) 4 ☐ (d) 3 ☐
50. If I run at 8 mph, taking a 15-minute break every hour, how long will it take me to run 64 miles?
- (a) 12 hours ☐ (b) 14 hours ☐
(c) 8 hours ☐ (d) 10 hours ☐

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PART-B
BASIC COMPUTER KNOWLEDGE : (50X2=100 Marks)

1. A computer assisted method for the recording and analyzing of existing or hypothetical systems is
 (a) Data transmission ☐ (b) Data flow ☐
 (c) Data processing ☐ (d) Data capture ☐
2. The brain of any computer system is
 (a) ALU ☐ (b) Memory ☐
 (c) CPU ☐ (d) Control Unit ☐
3. The tracks on a disk which can be accessed without repositioning the R/W heads is
 (a) Surface ☐ (b) Cylinder ☐
 (c) Cluster ☐ (d) All of the above ☐
4. The binary system uses powers of
 (a) 2 ☐ (b) 3 ☐
 (c) 4 ☐ (d) 5 ☐
5. A technique used by codes to convert an analog signal into a digital bit stream is known as
 (a) Pulse code modulation ☐ (b) Pulse stretcher ☐
 (c) Query processing ☐ (d) Queue management ☐
6. An optical input device that interprets pencil marks on paper media is
 (a) OMR ☐ (b) Magnetic Tape ☐
 (c) Punch Card Reader ☐ (d) Optical Scanner ☐
7. Resolution of laser printer is specified in terms of
 (a) DPI ☐ (b) LPM ☐
 (c) CPM ☐ (d) PPM ☐
8. The vast network of computers that connects million of people all over the world is called
 (a) LAN ☐ (b) Hypertext ☐
 (c) Web ☐ (d) Internet ☐
9. Any device that performs signal conversion is
 (a) Modulator ☐ (b) Keyboard ☐
 (c) UPS ☐ (d) Plotter ☐
10. The first generation of computers available was based on the bit micro processors.
 (a) 4 ☐ (b) 8 ☐
 (c) 16 ☐ (d) 64 ☐
11. Which is a unit representing the no bits of discrete.
 (a) Baud ☐ (b) Byte ☐
 (c) Tb ☐ (d) Bit ☐
12. One gigabyte memory storage in the form of bytes is equal to-
 (a) 1391 MB ☐ (b) 1024 MB ☐
 (c) 1024 KB ☐ (d) 1150 MB ☐
13. The terms HD, SD, VGA etc. are related to:
 (a) Quality Performance ☐ (b) Processing Power ☐
 (c) Sound Quality ☐ (d) Memory Capacity ☐
14. Which of the following are used for combining different kinds of media formats and deliver them as multimedia contents?
 (a) Scanners ☐ (b) Multimedia authoring tools ☐
 (c) Media Player ☐ (d) Device drivers ☐

15. Dot -Matrix, Deskjet, Inkjet and Laser are all types of which Computer peripherals-
- | | | | |
|--------------|--------------------------|---------------|--------------------------|
| (a) Printers | ☐ | (b) Software | ☐ |
| (c) Monitors | ☐ | (d) Keyboards | ☐ |
16. Internet Explorer is a type of -
- | | | | |
|----------------------|--------------------------|--------------|--------------------------|
| (a) Operating System | ☐ | (b) Browser | ☐ |
| (c) IP Address | ☐ | (d) Compiler | ☐ |
17. What technology of memory is Cache RAM usually?
- | | | | |
|----------|--------------------------|------------|--------------------------|
| (a) DRAM | ☐ | (b) Flash | ☐ |
| (c) SRAM | ☐ | (d) EEPROM | ☐ |
18. Which of the following holds the ROM, RAM, CPU?
- | | | | |
|------------------|--------------------------|-------------------|--------------------------|
| (a) Hard Disk | ☐ | (b) ALU | ☐ |
| (c) Mother board | ☐ | (d) None of these | ☐ |
19. ALU Stands for _____?
- | | | | |
|---------------------------|--------------------------|------------------------------|--------------------------|
| (a) Arithmetic Legal Unit | ☐ | (b) Arithmetic Logic Unit | ☐ |
| (c) Arithmetic Local Unit | ☐ | (d) Arithmetic Logic Utility | ☐ |
20. Which one of the following is an example of Operating System
- | | | | |
|----------------------|--------------------------|-----------------------|--------------------------|
| (a) Microsoft Word | ☐ | (b) Microsoft Excel | ☐ |
| (c) Microsoft Access | ☐ | (d) Microsoft Windows | ☐ |
21. CPU controls_____
- | | | | |
|--------------------------------------|--------------------------|-----------------------|--------------------------|
| (a) All Input, Output and processing | ☐ | (b) Controls Memory | ☐ |
| (c) Controlled by the input data | ☐ | (d) None of the above | ☐ |
22. Which one is not an input device?
- | | | | |
|--------------|--------------------------|-------------|--------------------------|
| (a) Keyboard | ☐ | (b) Mouse | ☐ |
| (c) Speaker | ☐ | (d) Scanner | ☐ |
23. Which of the following is true about primary storage?
- | | | | |
|-------------------------------------|--------------------------|--|--------------------------|
| (a) It is a part of the CPU | ☐ | (b) It allows very fast access to data | ☐ |
| (c) It is relatively more expensive | ☐ | (d) All of the above | ☐ |
24. The term 'memory' applies to which one of the following?
- | | | | |
|------------------|--------------------------|-------------------|--------------------------|
| (a) Logic | ☐ | (b) Storage | ☐ |
| (c) Input Device | ☐ | (d) Output Device | ☐ |
25. A collection of 8 bits is called
- | | | | |
|----------|--------------------------|------------|--------------------------|
| (a) Byte | ☐ | (b) Record | ☐ |
| (c) Word | ☐ | (d) Nibble | ☐ |
26. AVI (Audio Video Interleave) format was developed by?
- | | | | |
|---------------|--------------------------|-----------|--------------------------|
| (a) IBM | ☐ | (b) Apple | ☐ |
| (c) Microsoft | ☐ | (d) Adobe | ☐ |
27. One MB is equal to?
- | | | | |
|---------------|--------------------------|-------------|--------------------------|
| (a) 1024 Byte | ☐ | (b) 1024 KB | ☐ |
| (c) 1000 KB | ☐ | (d) 1024 GB | ☐ |
28. Any data or instruction entered into the memory of a computer is considered as
- | | | | |
|-------------|--------------------------|-----------------|--------------------------|
| (a) Storage | ☐ | (b) Output | ☐ |
| (c) Input | ☐ | (d) Information | ☐ |

29. Microprocessor was introduced in which generation of computer?
 (a) Second Generation ☐ (b) Fourth Generation ☐
 (c) Both (A) and (B) ☐ (d) Third Generation ☐
30. Which protocol provides e-mail facility among different hosts?
 (a) FTP ☐ (b) SMTP ☐
 (c) TELNET ☐ (d) SNMP ☐
31. What is the primary function of word processing software?
 (a) Creating and editing spreadsheets ☐ (b) Creating and editing text documents ☐
 (c) Creating and editing presentations ☐ (d) Managing databases ☐
32. Which feature of word processing software allows you to change the appearance of text, such as font, size, and color?
 (a) Spell check ☐ (b) Page Layout ☐
 (c) Formatting ☐ (d) Painting ☐
33. What is the purpose of a spell check feature in word processing software?
 (a) To create charts and graphs ☐ (b) To design presentation ☐
 (c) To check and correct spelling errors in a document ☐ (d) to Calculate Chart ☐
34. Which type of software allows you to insert and format images, shapes, and diagrams within a document?
 (a) Spreadsheet Software ☐ (b) Presentation Software ☐
 (c) Database Software ☐ (d) Word Processing Software ☐
35. What does IP stand for in the context of computer networks?
 (a) Internet Provider ☐ (b) Internet Protocol ☐
 (c) Internal Protocol ☐ (d) Information Protocol ☐
36. Which of the following devices is responsible for connecting multiple computers in a local area network (LAN)?
 (a) Router ☐ (b) Modem ☐
 (c) Switch ☐ (d) Firewall ☐
37. USB Stand for-
 (a) Universal Serial Bus ☐ (b) Universal Sequential Bus ☐
 (c) Unique Serial Bus ☐ (d) Unique Sequential Bus ☐
38. What does DNS stand for?
 (a) Dynamic Network System ☐ (b) Data Network Security ☐
 (c) Domain Name Server ☐ (d) Digital Naming Service ☐
39. CPU Stands for-
 (a) Central Performance Unit ☐ (b) Control Processing Unit ☐
 (c) Common Processing Unit ☐ (d) Central Processing Unit ☐
40. What type of data can be represented in a spreadsheet cell?
 (a) Text ☐ (b) Videos ☐
 (c) Images ☐ (d) All of the above ☐
41. Which of the following is a common input device used with GUI interfaces?
 (a) Printer ☐ (b) Keyboard ☐
 (c) Server ☐ (d) Projector ☐

42. What does WPA2 stand for in the context of wireless security?
- | | | | |
|--------------------------------|--------------------------|---------------------------------|--------------------------|
| (a) Wireless Personal Access 2 | ☐ | (b) Wireless Protected Access 2 | ☐ |
| (c) Wireless Public Access 2 | ☐ | (d) Wireless Private Access 2 | ☐ |
43. Which of the following is NOT a commonly used network topology?
- | | | | |
|----------|--------------------------|------------|--------------------------|
| (a) Star | ☐ | (b) Mesh | ☐ |
| (c) Ring | ☐ | (d) Linear | ☐ |
44. Which networking protocol is used for sending emails?
- | | | | |
|----------|--------------------------|----------|--------------------------|
| (a) HTTP | ☐ | (b) SMTP | ☐ |
| (c) POP3 | ☐ | (d) FTP | ☐ |
45. What does ISP stand for in the context of internet connectivity?
- | | | | |
|-------------------------------|--------------------------|-----------------------------------|--------------------------|
| (a) Internet Service Provider | ☐ | (b) Internet Security Protocol | ☐ |
| (c) Internet Speed Test | ☐ | (d) International Server Protocol | ☐ |
46. Which protocol is commonly used for retrieving email from a mail server?
- | | | | |
|----------|--------------------------|----------|--------------------------|
| (a) HTTP | ☐ | (b) SMTP | ☐ |
| (c) POP3 | ☐ | (d) FTP | ☐ |
47. In spreadsheet software, what do you call the intersection of a row and a column where data is entered?
- | | | | |
|-----------|--------------------------|-------------|--------------------------|
| (a) Cell | ☐ | (b) Formula | ☐ |
| (c) Block | ☐ | (d) Table | ☐ |
48. Which protocol is commonly used for secure communication over the internet?
- | | | | |
|-------------|--------------------------|----------|--------------------------|
| (a) HTTP | ☐ | (b) SMTP | ☐ |
| (c) SSL/TLS | ☐ | (d) FTP | ☐ |
49. Which of the following IP address classes is reserved for multicast groups?
- | | | | |
|-------------|--------------------------|-------------|--------------------------|
| (a) Class A | ☐ | (b) Class B | ☐ |
| (c) Class C | ☐ | (d) Class D | ☐ |
50. What is the purpose of a firewall in a computer network?
- | | | | |
|--------------------------------|--------------------------|----------------------------------|--------------------------|
| (a) To provide internet access | ☐ | (b) To block unauthorized access | ☐ |
| (c) to filter emails | ☐ | (d) To boost network speed | ☐ |

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