

Government Polytechnic, Diglipur

Recruitment for the Post of Lecturer (CSE) on Contractual Basis

Date of Examination: 18/08/2026

Exam Time: 10:00 AM - 12:00 PM

Exam Slot: A1

ANSWER KEY

#	Question	Answer Key	Remarks
1	Which of the following is a characteristic of a good algorithm? A. Clear and unambiguous steps B. Infinite number of steps C. No defined output D. Random execution order	A	
2	Computers in robotics are mainly used to A. Automate repetitive tasks B. Increase human workload C. Replace electricity D. Reduce Internet speed.	A	
3	Which storage device has no moving mechanical parts? A. HDD B. Floppy Disk C. SSD D. DVD	C	
4	Which storage capacity is the largest? A. XB B. GB C. TB D. PB	A	
5	The first page of a website is generally called the A. Login Page B. Home Page C. Search Page D. Contact Page	B	
6	Which software manages computer hardware? A. Application Software B. Utility Software C. System Software D. Spread sheet Software	C	
7	Which flowchart symbol represents a processing step? A. Rectangle B. Diamond C. Circle D. Arrow	A	

8	A student is solving a problem that requires repeated decisions. Which combination is most appropriate? A. Rectangle and Oval only B. Diamond and Flow Lines C. Circle and Rectangle only D. Parallelogram only	B	
9	CPU clock speed is commonly measured in A. Megabytes (MB) B. Gigahertz (GHz) C. Volts (V) D. Watts (W)	B	
10	Why are computers important in education? A. They support online learning and digital educational resources. B. They eliminate the need for teachers completely. C. They replace textbooks permanently. D. They work without electricity.	A	
11	Which statement is TRUE? A. Library functions must always be written by the programmer. B. User-defined functions are built into the C compiler. C. Library functions require appropriate header files. D. Local variables are stored permanently.	C	
12	Which of the following is the correct order for using a structure? A. Declare variable → Define structure B. Define structure → Declare structure variable → Access members C. Access members → Define structure D. Declare variable → Access members → Define structure	B	
13	Which of the following is the correct way to change the first element of an array a? A. a(0)=5; B. a[0]=5; C. a{0}=5; D. 0[a]=5;	B	
14	In the declaration int *ptr;, ptr is: A. An integer variable B. A pointer to an integer C. An array D. A function	B	
15	Which of the following correctly declares a string? A. string name = "John"; B. char name[20] = "John"; C. text name = "John"; D. char name = "John";	B	

16	Which statement correctly copies "India" into the array country? A. country = "India"; B. copy(country, "India"); C. strcpy(country, "India"); D. country.copy("India");	C	
17	Memory allocated for local variables inside a function is: A. Static B. Dynamic C. Automatic D. Global	C	
18	What is the output? int a[4]={2,4,6,8}; printf("%d", a[3]); A. 2 B. 4 C. 6 D. 8	D	
19	What happens if a recursive function has no terminating condition? A. The program executes normally. B. The recursion stops automatically. C. The program may run indefinitely and cause a stack overflow. D. The compiler reports an error.	C	
20	What will be the output? char name[] = "Hello"; printf("%c", name[2]); A. H B. e C. l D. o	C	
21	A node that has no children is called: A. Parent node B. Internal node C. Leaf node D. Root node	C	
22	What is the time complexity of the enqueue operation? A. O(n) B. O(log n) C. O(1) D. O(n²)	C	
23	Which of the following is an advantage of using data structures? A. Slower processing B. Better organization and efficient data management C. Increased memory wastage D. Elimination of algorithms	B	

24	Which case is generally considered while calculating time complexity? A. Best case B. Average case C. Worst case D. Random case	C	
25	Which of the following has logarithmic time complexity? A. Binary Search B. Linear Search C. Bubble Sort D. Printing an array	A	
26	What is the average-case time complexity of Quick Sort? A. $O(n^2)$ B. $O(n \log n)$ C. $O(n)$ D. $O(\log n)$	B	
27	Which pointer is used to indicate the top element of a stack? A. Head B. Front C. Top D. Rear	C	
28	Which searching technique is suitable for unsorted data? A. Binary Search B. Linear Search C. Tree Search D. Random Search	B	
29	Which sorting algorithm sorts integers digit by digit? A. Bubble Sort B. Radix Sort C. Merge Sort D. Selection Sort	B	
30	What is the time complexity of traversing an array of size N once? A. $O(1)$ B. $O(\log n)$ C. $O(n)$ D. $O(n^2)$	C	
31	A virtual function is declared in the A. Derived class only B. Base class C. Main function D. Constructor	B	

32	Which symbol is used to dereference a pointer? A. & B. * C. # D. %	B	
33	Which of the following is a valid C++ comment? A. // This is a comment B. /* This is a comment */ C. Both A and B D. # This is a comment	C	
34	Which access specifier allows members to be inherited but not accessed directly from outside the class? A. public B. protected C. private D. static	B	
35	What happens if a matching case does not contain a break statement? A. The program terminates immediately. B. Control falls through to the next case(s). C. Compilation fails. D. The default case is skipped.	B	
36	Which statement about objects is TRUE? A. A class can exist only after an object is created. B. Multiple objects can be created from a single class. C. An object cannot access class members. D. Every object must belong to a different class.	B	
37	What happens if the loop condition is false initially? A. The loop executes once. B. The loop executes infinitely. C. The loop body is skipped. D. Compilation error occurs.	C	
38	Who developed the C++ programming language? A. Dennis Ritchie B. Bjarne Stroustrup C. James Gosling D. Guido van Rossum	B	
39	What is the Output ? <pre>int x = 5; cout << x++;</pre> A. 5 B. 6 C. 4 D. Error	A	

40	Which feature allows a derived class to provide its own implementation of a virtual function? A. Function Overloading B. Function Overriding C. Encapsulation D. Abstraction	B	
41	Which scheduler selects processes from the ready queue? A. Long-term Scheduler B. Medium-term Scheduler C. Short-term Scheduler (CPU Scheduler) D. Job Scheduler	D	
42	During context switching, the Operating System saves the A. File contents B. Process state in the PCB C. Database records D. Cache memory only	B	
43	Turnaround time is A. Completion Time – Arrival Time B. Burst Time – Waiting Time C. Arrival Time – Completion Time D. Waiting Time – Burst Time.	A	
44	Which of the following is the correct sequence for executing an application? A. User → Operating System → Hardware → Application B. User → Hardware → Operating System → Application C. User → Application → Operating System → Hardware D. Hardware → User → Application → Operating System	C	
45	Which scheduler is invoked most frequently? A. Long-term Scheduler B. Medium-term Scheduler C. Short-term Scheduler D. Job Scheduler	C	
46	Which memory management technique loads pages into memory only when required? A. Static Allocation B. Demand Paging C. Swapping D. Segmentation	B	
47	Which table is used to map logical addresses to physical addresses in paging? A. Process Table B. File Allocation Table C. Page Table D. Routing Table	C	

48	In a layered operating system, the bottom-most layer is A. User Interface B. Application Programs C. Hardware D. File System	C	
49	Aging is a technique used to prevent A. Deadlock B. Starvation C. Paging D. Fragmentation	B	
50	Which memory management technique divides memory into fixed-size blocks? A. Segmentation B. Paging C. Swapping D. Spooling	B	
51	Which topology uses a single backbone cable to connect all devices? A. Ring B. Bus C. Mesh D. Tree	B	
52	Hamming Code is mainly used for: A. Encryption B. Error correction C. Data compression D. Routing	B	
53	Which connector is commonly used with telephone cables? A. RJ-11 B. RJ-45 C. BNC D. SC	A	
54	Which cable has a central conductor surrounded by an insulating layer and metallic shield? A. Twisted Pair Cable B. Optical Fiber Cable C. Coaxial Cable D. Ribbon Cable	C	
55	A router primarily operates at which OSI layer? A. Physical Layer B. Data Link Layer C. Network Layer D. Application Layer	C	

56	Which protocol is used for reliable data transmission? A. UDP B. IP C. TCP D. ARP	C	
57	Which device broadcasts incoming data to all connected ports? A. Switch B. Router C. Hub D. Bridge	C	
58	Which type of twisted pair cable has no metallic shielding? A. STP B. UTP C. FTP D. Coaxial	B	
59	Which device connects two similar LAN segments? A. Modem B. Bridge C. Router D. Gateway	B	
60	Consider the following statements: 1. HTTP uses TCP. 2. FTP uses TCP. 3. DNS always uses TCP only. 4. SMTP uses TCP. A. 1, 2 and 4 are True B. 2 and 3 are True C. 1 and 3 are True D. All are True	A	
61	Which normal form removes transitive dependency? A. 1NF B. 2NF C. 3NF D. 4NF	C	
62	The Customer table with attributes Name, Phoneno. I want to add Rollno column .which command to use. A. Alter B. Insert C. Add D. Select	A	
63	A foreign key in one table usually references the A. Candidate Key of the same table B. Primary Key of another table C. Composite Key only D. Alternate Key only	B	

64	Which of the following correctly represents the hierarchy of data organization? A. Field → Record → File → Database B. Database → File → Record → Field C. Record → Field → Database → File D. File → Database → Record → Field	A	
65	Which ACID property ensures that a transaction is completed entirely or not executed at all? A. Consistency B. Isolation C. Atomicity D. Durability	C	
66	In a functional dependency $X \rightarrow Y$, X is called the A. Dependent attribute B. Determinant C. Candidate key D. Foreign key	B	
67	In Relational data model, the degree of a relation Student(Rollno, Name, Age, DoB) is A. 1 B. 4 C. 3 D. 2	B	
68	Which ACID property prevents concurrent transactions from interfering with each other? A. Atomicity B. Isolation C. Durability D. Consistency	B	
69	Which of the following is the smallest unit of data in a file system? A. Record B. Field C. File D. Database	B	
70	A primary Key can not contain A. Null value B. Duplicate value C. Null and duplicate value D. Unique	C	
71	The primary goal of User Interface (UI) design is to: A. Increase software size B. Make software easy and efficient to use C. Reduce memory size D. Replace software testing	B	

72	Which quality characteristic is related to moving software from one platform to another? A. Maintainability B. Portability C. Correctness D. Budget	B	
73	Prototyping is mainly used to: A. Replace the final product B. Help users visualize requirements C. Test databases D. Increase coding speed	B	
74	KLOC stands for: A. Kilo Level of Coding B. Kilo Line of Code C. Kernel Line of Code D. Known Line of Code	B	
75	A software project ends when: A. Coding is completed B. Testing is completed C. The intended software product is delivered and objectives are achieved D. Documentation starts	C	
76	A project is defined as: A. A routine daily activity B. A temporary endeavor with a specific goal C. An ongoing business operation D. A maintenance activity	B	
77	Integration Testing is performed to: A. Test complete software B. Test interaction between modules C. Test individual functions only D. Test user requirements	B	
78	Which SDLC phase verifies whether the software meets the specified requirements? A. Maintenance B. Testing C. Requirement Analysis D. Deployment	B	
79	Project planning is performed: A. After deployment B. Before software production starts C. During maintenance D. After testing	B	

80	Validation answers the question: A. "Are we building the product right?" B. "Are we building the right product?" C. "Is coding completed?" D. "Is maintenance required?"	B	
81	Which of the following is not a pointing device? A. Mouse B. Joystick C. Digitizer D. Light Pen	C	
82	A daughter board is: A. The main motherboard B. An expansion board connected to the motherboard C. A processor chip D. A memory module	B	
83	SMPS is mainly used for obtaining A. High-frequency AC supply B. Controlled DC supply C. Variable resistance D. Mechanical power	B	
84	Which connector supplies electrical power to the motherboard? A. SATA Connector B. ATX Power Connector C. USB Connector D. VGA Connector	B	
85	What is the purpose of “Safe Mode” in windows troubleshooting? A. To run the computer at maximum performance. B. To test hardware components. C. To start windows with a minimal set of drivers and services. D. To uninstall software	C	
86	Battery capacity is generally measured in A. Volt B. Watt C. Ampere-hour (Ah) D. Ohm	C	
87	A customer calls and report that her computer shuts down and reboots on its own. What is the possible cause? A. The BIOS is set to reboot automatically every day. B. Her External SCSI CD-RW is using too much power. C. The CMOS is configured to cycle power at certain time. D. The power supply is not providing enough power to the system.	D	

88	What is the Purpose of a task manager in troubleshooting? A. To install software updates B. To monitor system performance and terminate unresponsive applications. C. To scan for viruses. D. To defragment the hard drive.	B	
89	The number of function keys in a keyboard is A. 14 B. 12 C. 13 D. 15	B	
90	Which type of files can Disk Cleanup remove? A. Temporary files B. System cache files C. Recycle Bin files D. All of the above	D	
91	The Cohen–Sutherland algorithm is mainly used for: A. Circle generation B. Polygon filling C. Line clipping D. Scaling	C	
92	The region where graphics are displayed is called the: A. Frame Buffer B. Clipping Window C. Viewport D. Pixel Map	B	
93	Bitmap images are best suited for: A. Logos only B. Photographs and realistic images C. Mathematical equations only D. Text documents only	B	
94	Rendering is the process of: A. Compressing images B. Generating a shaded image from a 3D model C. Scanning documents D. Encrypting graphics.	B	
95	Which memory stores the pixel information of an image? A. Cache Memory B. Frame Buffer C. ROM D. Register	B	
96	The initial point in the Midpoint Circle Algorithm is: A. (r, 0) B. (0, r) C. (r, r) D. (1, 1)	B	

97	Which function is generally used to determine the pixel position in the DDA algorithm? A. Floor() B. Ceil() C. Round() D. Abs()	C	
98	Which algorithm is commonly used for polygon clipping? A. Cohen–Sutherland B. Bresenham C. Sutherland–Hodgman D. DDA	C	
99	In raster scanning, the image is drawn: A. Bottom to top B. Right to left C. Top to bottom, one scan line at a time D. Randomly	C	
100	In Bresenham's algorithm, if $p_k \geq 0$, the next pixel is: A. $(x_k + 1, y_k)$ B. $(x_k, y_k + 1)$ C. $(x_k + 1, y_k + 1)$ D. $(x_k - 1, y_k - 1)$	C	

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Recruitment for the Post of Lecturer (Maths) on Contractual Basis

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ANSWER KEY

#	Question	Answer Key	Remarks
1	If $A = \begin{bmatrix} 2 & 3 \\ 1 & -2 \end{bmatrix}$ and $A^{-1} = aA$, then the value of a is A. 7 B. -7 C. $\frac{1}{7}$ D. $-\frac{1}{7}$	C	
2	The $\int \frac{\cos x}{(1+\sin x)(2+\sin x)} dx$ equals A. $\log(1 + \sin x)(2 + \sin x) + C$ B. $\log \left \frac{2+\sin x}{1+\sin x} \right + C$ C. $\log \left \frac{1+\sin x}{2+\sin x} \right + C$ D. None of these	C	
3	If $\log a = 0.5678$ then $\log \sqrt{a} =$ A. $\sqrt{0.5678}$ B. $0.5678 \div 2$ C. $0.5678 - 2$ D. 2.5678	B	
4	The inverse of the matrix by using elementary operations $\begin{bmatrix} 1 & 2 \\ 2 & -1 \end{bmatrix}$ is A. $\begin{bmatrix} \frac{1}{3} & \frac{2}{3} \\ \frac{2}{5} & -\frac{1}{3} \end{bmatrix}$ B. $\begin{bmatrix} \frac{1}{5} & \frac{2}{5} \\ \frac{2}{5} & -\frac{1}{5} \end{bmatrix}$ C. $\begin{bmatrix} \frac{1}{7} & \frac{2}{7} \\ \frac{2}{7} & -\frac{1}{7} \end{bmatrix}$ D. None of these.	B	
5	The square matrix $[a_{ij}]$ in which $a_{ij} = 0$ for $i \neq j$ and $a_{ij} = k(\text{constant})$ for $i = j$ is called a A. unit matrix B. null matrix C. diagonal matrix D. scalar matrix	D	
6	What is $\frac{\log_{10} 5}{\log_{10} 3}$ equal to? A. $\frac{5}{3}$ B. $\log_{10} (5-3)$ C. $\log_{10} 5 - \log_{10} 3$ D. $\log_3 5$	D	
7	The number of all possible matrices of order 3x3 with each entry 0 or 1 is A. 27 B. 18 C. 81 D. 512	D	

8	A 3x3 matrix $A=[a_{ij}]$ whose elements are given by $a_{ij} = (i + j)^2$ is A. $\begin{bmatrix} 4 & 9 & 16 \\ 9 & 16 & 25 \\ 16 & 25 & 18 \end{bmatrix}$ B. $\begin{bmatrix} 4 & 9 & 16 \\ 9 & 16 & 25 \\ 16 & 25 & 26 \end{bmatrix}$ C. $\begin{bmatrix} 4 & 9 & 16 \\ 9 & 16 & 25 \\ 16 & 25 & 36 \end{bmatrix}$ D. None of these	C	
9	Solution of system of linear equations $2x + 5y = 1, 3x + 2y = 7$ is A. $x = 3, y = -3$ B. $x = 3, y = -1$ C. $x = -1, y = 3$ D. None of these	B	
10	The value of the determinant $\begin{vmatrix} 2 & 3 & 4 \\ -5 & 6 & -10 \\ 1 & 7 & 2 \end{vmatrix}$ is A. -440 B. 0 C. 328 D. 488	B	
11	The $\int \frac{x}{(x-1)(x-2)} dx$ equals A. $\log \left \frac{(x-1)^2}{x-2} \right + C$ B. $\log \left \frac{(x-2)^2}{x-1} \right + C$ C. $\log \left \left(\frac{x-1}{x-2} \right)^2 \right + C$ D. $\log (x-1)(x-2) + C$	B	
12	If $A = \begin{bmatrix} 1 & -1 & 1 \\ 0 & 2 & 3 \\ 2 & 1 & 0 \end{bmatrix}$ and $B = (\text{adj } A)$, and $C = 5A$, then $\frac{ \text{adj } B }{ C }$ A. 5 B. 25 C. -1 D. 1	D	
13	The $\int \frac{dx}{x(x^2+1)}$ equals A. $\log x - \frac{1}{2} \log x^2+1 + C$ B. $\log x + \frac{1}{2} \log x^2+1 + C$ C. $-\log x + \frac{1}{2} \log x^2+1 + C$ D. $\frac{1}{2} \log x + \log x^2+1 + C$	A	
14	If $A = \begin{bmatrix} \cos \alpha & -\sin \alpha \\ \sin \alpha & \cos \alpha \end{bmatrix}$, then $A + A' = I$, if the value of α is A. $\frac{\pi}{6}$ B. $\frac{\pi}{3}$ C. π D. $\frac{3\pi}{2}$	B	
15	Matrices A and B will be inverse of each other only if A. $AB=BA$ B. $AB=BA=0$ C. $AB=0, BA=I$ D. $AB=BA=I$	D	

16	Which of the given values of x and y make the following pair of matrices equal? $\begin{bmatrix} 3x+7 & 5 \\ y+1 & 2-3x \end{bmatrix} = \begin{bmatrix} 0 & y-2 \\ 8 & 4 \end{bmatrix}$ A. $x = \frac{-1}{3}, y = 7$ B. $x = \frac{-1}{3}, y = \frac{-2}{3}$ C. $y = 7, x = \frac{-2}{3}$ D. Not possible to find	D	
17	If $A = \begin{bmatrix} x & y^3 \\ 2 & 0 \end{bmatrix} = \begin{bmatrix} 1 & 8 \\ 2 & 0 \end{bmatrix}$, then $\begin{bmatrix} x & y \\ 2 & 0 \end{bmatrix}^{-1} =$ A. $\begin{bmatrix} 0 & -2 \\ -2 & 1 \end{bmatrix}$ B. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ C. $\begin{bmatrix} 0 & -8 \\ -2 & 1 \end{bmatrix}$ D. $\begin{bmatrix} 0 & \frac{1}{2} \\ \frac{1}{2} & \frac{-1}{4} \end{bmatrix}$	D	
18	If $A = \begin{bmatrix} 2 & 4 & 1 \\ 5 & -6 & 2 \\ 2 & 1 & 5 \end{bmatrix}$, the trace of A is A. 8 B. 1 C. -5 D. 3	B	
19	The $\int \frac{dx}{(x^2-9)}$ equals _____ A. $\frac{1}{6} \ln \left \frac{x-3}{x+3} \right + C$ B. $\frac{1}{6} \ln \left \frac{x+3}{x-3} \right + C$ C. $\ln \left \frac{x+3}{x-3} \right + C$ D. $\frac{1}{3} \ln \left \frac{x-3}{x+3} \right + C$	A	
20	If $A = \begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$, then $A^3 + 3A^2 - 4A + I$ is equal to A. $\begin{bmatrix} -14 & -51 \\ -17 & -14 \end{bmatrix}$ B. $\begin{bmatrix} -14 & 51 \\ -17 & -14 \end{bmatrix}$ C. $\begin{bmatrix} -1 & -1 \\ -1 & 0 \end{bmatrix}$ D. $\begin{bmatrix} 1 & 1 \\ 1 & 0 \end{bmatrix}$	B	
21	The value of $3 \tan^{-1} \frac{1}{2} + 2 \tan^{-1} \frac{1}{5} + \sin^{-1} \frac{142}{65\sqrt{5}}$ is equal to A. $\frac{\pi}{4}$ B. $\frac{\pi}{2}$ C. π D. None of these	C	
22	The value of $\frac{\cos(\pi+x)\cos(-x)}{\sin(\pi-x)\cos(\frac{\pi}{2}+x)}$ is A. $\sin^2 x$ B. $\cot^2 x$ C. $\tan^2 x$ D. $\cos^2 x$	B	

23	If $0 < x < \frac{\pi}{4}$, then the value of $\sqrt{1 - \sin 2x}$ is A. $\cos x - \sin x$ B. $\cos x + \sin x$ C. $\sin x - \cos x$ D. $(\sin x - \cos x)^2$	A	
24	The value of $\sin(\tan^{-1}x)$, $x < 1$ is equal to A. $\frac{x}{\sqrt{1-x^2}}$ B. $\frac{1}{\sqrt{1-x^2}}$ C. $\frac{1}{\sqrt{1+x^2}}$ D. $\frac{x}{\sqrt{1+x^2}}$	D	
25	If $\sin^{-1}x + \cot^{-1}\left(\frac{1}{2}\right) = \frac{\pi}{2}$, then x is equal to A. 0 B. $\frac{1}{\sqrt{5}}$ C. $\frac{2}{\sqrt{5}}$ D. $\frac{\sqrt{3}}{2}$	B	
26	Which is correct? A. $\sin 3x = 3\sin x - 4\sin^3 x$ B. $\sin 3x = 4\sin x - 3\sin^3 x$ C. $\sin 3x = 3\sin^3 x - 4\sin x$ D. $\sin 3x = 4\sin^3 x - 3\sin x$	A	
27	The value of $\sin(-690^\circ)\cos(-300^\circ) + \cos(-750^\circ)\sin(-240^\circ)$ A. 2 B. -1 C. 1 D. 0	C	
28	The value of $\cos^{-1}\left(\cos\frac{7\pi}{6}\right)$ is equal to A. $\frac{7\pi}{6}$ B. $\frac{5\pi}{6}$ C. $\frac{\pi}{3}$ D. $\frac{\pi}{6}$	B	
29	The value of $\tan^{-1}\sqrt{3} - \sec^{-1}(-2)$ is equal to A. π B. $-\frac{\pi}{3}$ C. $\frac{\pi}{3}$ D. $\frac{2\pi}{3}$	B	
30	The principal value branch of $\sec^{-1}x$ is A. $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right] - \{0\}$ B. $(0, \pi) - \left\{\frac{\pi}{2}\right\}$ C. $(0, \pi)$ D. $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$	B	

31	If $\sin^{-1}x = y$, then A. $0 \leq y \leq \pi$ B. $\frac{-\pi}{2} \leq y \leq \frac{\pi}{2}$ C. $0 < y < \pi$ D. $\frac{-\pi}{2} < y < \frac{\pi}{2}$	B	
32	The value of $\frac{\cos 7x + \cos 5x}{\sin 7x - \sin 5x}$ is A. $-\cot x$ B. $\tan x$ C. $-\tan x$ D. $\cot x$	D	
33	If $\tan \theta = \frac{1}{2}$ and $\tan \phi = \frac{1}{3}$, then $\tan(\theta + \phi) =$ A. 45° B. 1 C. 0 D. 135°	B	
34	The value of $\cos 1050^\circ$ is A. $-\sqrt{3}$ B. $\frac{2}{\sqrt{3}}$ C. $\frac{\sqrt{3}}{2}$ D. $\frac{1}{\sqrt{3}}$	C	
35	If $f(x) = \cos^2 x + 1$, then A. $2 \leq f(x) \leq 1$ B. $0 < f(x) < 1$ C. $0 \leq f(x) \leq 1$ D. $1 \leq f(x) \leq 2$	D	
36	If $\sin x = 0$ then $x =$ A. $n\pi$ B. $(2n + 1)\pi/2$ C. $(n + 1)\pi$ D. $n\pi/2$	A	
37	If $\cos x = 1/2$, then $\cos 3x =$ _____ A. 0 B. -1 C. $1/\sqrt{2}$ D. 1	B	
38	The solutions of a trigonometric equation for which _____ are called principal solutions. A. $0 < x < 2\pi$ B. $0 \leq x < \pi$ C. $0 \leq x < 2\pi$ D. $0 \leq x < n\pi$	C	
39	The value of $\tan (19\pi/6)$ is equal to a) $\sqrt{3}$ b) $-1/\sqrt{3}$ c) $-\sqrt{3}$ d) $1/\sqrt{3}$	D	

40	Find the principal solutions of the equation $\tan x = -\sqrt{3}$. A. $\pi/6, 5\pi/6$ B. $\pi/3, 5\pi/3$ C. $\pi/3, 2\pi/3$ D. $2\pi/3, 5\pi/3$	D	
41	The slope of the line $4x - 2y + 7 = 0$ is (A) -2 (B) $-\frac{1}{2}$ (C) 2 (D) $\frac{1}{2}$	C	
42	The distance from the point $(1, 2)$ to the line $5x + 12y - 3 = 0$ is (A) 1 unit (B) 2 units (C) 3 units (D) 5 units	B	
43	A train of length 560 m moves with a uniform speed of 12.5 m/s. If time x is measured in seconds and the distance y of the last coach from the entry point is measured in meters, the equation of its motion is (A) $y = 12.5x + 560$ (B) $y = 12.5x - 560$ (C) $y = 560x - 12.5$ (D) $y = -12.5x - 560$	B	
44	In the general equation $ax + by + c = 0$, the slope of the line, when $b \neq 0$, is (A) $\frac{a}{b}$ (B) $-\frac{a}{b}$ (C) $\frac{b}{a}$ (D) $-\frac{b}{a}$	B	
45	The seventh term of an arithmetic progression is 30 and the tenth term is 21. The common difference of the A.P. is (A) 3 (B) -3 (C) 7 (D) -7	B	
46	A line passes through $(2, 3)$ and is parallel to the x -axis. Its equation is (A) $x = 2$ (B) $y = 2$ (C) $x = 3$ (D) $y = 3$	D	

47	If a line makes an angle 90° with the positive x-axis, its slope is (A) 0 (B) 1 (C) -1 (D) Undefined	D	
48	In the equation $\frac{x}{a} + \frac{y}{b} = 1$, the values a and b represent respectively (A) Slope and y-intercept (B) x-intercept and y-intercept (C) y-intercept and slope (D) Two slopes	B	
49	The perpendicular distance from $(1, 2)$ to the line $3x + 4y - 11 = 0$ is (A) 0 (B) 1 (C) 2 (D) 5	A	
50	Which equation represents the line joining $(0, 2)$ and $(2, 6)$? (A) $y = x + 2$ (B) $y = 2x + 2$ (C) $y = 2x - 2$ (D) $y = 3x + 2$	B	
51	Which pair of lines is parallel? (A) $2x + 3y + 1 = 0$ and $4x + 6y - 5 = 0$ (B) $2x + 3y + 1 = 0$ and $3x - 2y + 5 = 0$ (C) $x + 2y = 0$ and $2x - y = 0$ (D) $3x - y = 0$ and $x + 3y = 0$	A	
52	A line cuts an intercept of 5 units on the negative y-axis and is inclined at 150° to the positive x-axis. Its equation is (A) $y = -\frac{x}{\sqrt{3}} - 5$ (B) $y = \frac{x}{\sqrt{3}} - 5$ (C) $y = -\sqrt{3}x - 5$ (D) $y = -\frac{x}{\sqrt{3}} + 5$	A	
53	Consider the lines $l_1 : 3x + 4y = 5, \quad l_2 : 4x - 3y = 1,$ $l_3 : 4x + 3y = 7, \quad l_4 : 3x + 4y = 2.$ Which pair of lines is perpendicular? (A) l_1 and l_2 (B) l_1 and l_4 (C) l_2 and l_3 (D) l_3 and l_4	A	

54	The equation of the line parallel to $3x + 4y - 7 = 0$ and passing through $(1, 2)$ is (A) $3x + 4y - 11 = 0$ (B) $3x + 4y + 11 = 0$ (C) $4x + 3y - 10 = 0$ (D) $3x - 4y + 5 = 0$	A	
55	The equation of a straight line is $2x + 3y - 6 = 0$. The point where the line cuts the y-axis is (A) $(3, 0)$ (B) $(0, 2)$ (C) $(2, 0)$ (D) $(0, 3)$	B	
56	The line r passes through $(-2, 2)$ and $(5, 8)$, and the line s passes through $(-8, 7)$ and $(-2, 0)$. Which statement is correct? (A) r and s are parallel (B) r and s are perpendicular (C) r and s have the same slope (D) r is a vertical line	B	
57	If two points used in the two-point form have the same x-coordinate, the resulting line is (A) Horizontal (B) Vertical (C) Parallel to the x-axis (D) Passing through the origin	B	
58	Two lines have slopes 2 and $-\frac{1}{2}$. The angle between the two lines is (A) 30° (B) 45° (C) 60° (D) 90°	D	
59	The equation of the line passing through the point $(2, 3)$ with slope 4 is (A) $y - 2 = 4(x - 3)$ (B) $y - 3 = 4(x - 2)$ (C) $y + 3 = 4(x + 2)$ (D) $y - 3 = 2(x - 4)$	B	
60	Find the distance between the points $(5, 4)$ and $(2, 0)$. (A) 3 units (B) 4 units (C) 5 units (D) 7 units	C	
61	For the curve $y = x^2$, the slope of the normal at $x = 1$ is (A) 2 (B) -2 (C) $\frac{1}{2}$ (D) $-\frac{1}{2}$	D	

62	The value of $\int x^2 dx$ is (A) $x^3 + C$ (B) $\frac{x^3}{3} + C$ (C) $\frac{x^2}{2} + C$ (D) $2x + C$	B	
63	If $f'(x)$ changes sign from positive to negative at $x = c$, then f has (A) a local minimum at c (B) a local maximum at c (C) no extremum at c (D) a point of discontinuity at c	B	
64	If $y = \sin(x^2)$, then $\frac{dy}{dx}$ is (A) $\cos(x^2)$ (B) $2x \cos(x^2)$ (C) $\sin(2x)$ (D) $2x \sin(x^2)$	B	
65	Evaluate $\lim_{n \rightarrow \infty} \left[\frac{n}{n^2} + \frac{n}{n^2 + 1^2} + \frac{n}{n^2 + 2^2} + \cdots + \frac{n}{n^2 + (n-1)^2} \right].$ (A) $\frac{\pi}{2}$ (B) $\frac{\pi}{4}$ (C) 1 (D) $\frac{\pi}{3}$	B	
66	Evaluate $\lim_{x \rightarrow 0} \frac{xe^x - \log(1+x)}{x^2}$. (A) 1 (B) $\frac{1}{2}$ (C) $\frac{3}{2}$ (D) 2	C	
67	If $y = (x^2 + 1)^5$, then $\frac{dy}{dx}$ is (A) $5(x^2 + 1)^4$ (B) $10x(x^2 + 1)^4$ (C) $2x(x^2 + 1)^5$ (D) $10(x^2 + 1)^5$	B	
68	The derivative of $y = \log x$ is (A) x (B) $\frac{1}{x}$ (C) $\log x$ (D) e^x	B	
69	The domain of $f(x) = \frac{1}{x-2}$ is (A) $\mathbb{R}$ (B) $\mathbb{R} \setminus \{0\}$ (C) $\mathbb{R} \setminus \{2\}$ (D) $\mathbb{R} \setminus \{-2\}$	C	

70	The area under the curve $y = x$ between $x = 0$ and $x = 2$ is (A) 1 (B) 2 (C) 3 (D) 4	B	
71	Consider $f(x) = \begin{cases} x^2 \sin\left(\frac{1}{x}\right), & x \neq 0, \\ 0, & x = 0. \end{cases}$ Which of the following is correct? (A) f is not continuous at 0 (B) f is continuous but not differentiable at 0 (C) f is differentiable at 0, but f' is not continuous at 0 (D) Both f and f' are continuous at 0	C	
72	Evaluate $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2}$. (A) 0 (B) $\frac{1}{2}$ (C) 1 (D) 2	B	
73	The value of $\int \cos x \, dx$ is (A) $-\sin x + C$ (B) $\sin x + C$ (C) $\cos x + C$ (D) $-\cos x + C$	B	
74	If $y = x^2$, then the slope of the tangent at $x = 2$ is (A) 2 (B) 4 (C) 6 (D) 8	B	
75	If $f'(c) = 0$, then c is called a (A) point of discontinuity (B) stationary point (C) point outside the domain (D) point where f is undefined	B	
76	Using integration by parts, evaluate $\int x e^x \, dx$. (A) $e^x(x + 1) + C$ (B) $x e^x + C$ (C) $e^x(x - 1) + C$ (D) $x^2 e^x + C$	C	
77	If $y = x^x, x > 0$, then $\frac{dy}{dx}$ is (A) x^x (B) x^{x-1} (C) $x^x(1 + \ln x)$ (D) $x^x \ln x$	C	

78	The function $f(x) = x^2$ has at $x = 0$ (A) a local maximum (B) a local minimum (C) neither a maximum nor a minimum (D) a point of discontinuity	B	
79	For a Cartesian curve, if $y_1 = \frac{dy}{dx}$, $y_2 = \frac{d^2y}{dx^2}$, the radius of curvature is (A) $\frac{1 + y_1^2}{y_2}$ (B) $\frac{(1 + y_1^2)^{3/2}}{y_2}$ (C) $\frac{y_2}{(1 + y_1^2)^{3/2}}$ (D) $\frac{(1 + y_1^2)^2}{y_2}$	B	
80	If $x = a \cos t$, $y = a \sin t$, then $\frac{dy}{dx}$ is (A) $\tan t$ (B) $-\tan t$ (C) $\cot t$ (D) $-\cot t$	D	
81	If the variance of a dataset is 25, its standard deviation is (A) 5 (B) 10 (C) 25 (D) 125	A	
82	The coefficient of range for the data 2, 6, 10, 14 is (A) $\frac{3}{4}$ (B) $\frac{1}{2}$ (C) $\frac{2}{3}$ (D) $\frac{3}{5}$	A	
83	The marks obtained by a student in four subjects are 50, 60, 70, and 80 with weights 1, 2, 3, and 4 respectively. The weighted mean is (A) 65 (B) 70 (C) 75 (D) 80	B	
84	The mean deviation about the mean for the observations 5, 10, 15 is (A) 0 (B) 5 (C) 10 (D) 3.33	D	
85	The sum of squares of deviations from the mean for 10 observations is 250. The variance is (A) 5 (B) 10 (C) 25 (D) 125	C	

86	For the following frequency distribution, find the mean deviation about the mean. <table border="1"> <tr> <td>x</td><td>2</td><td>4</td><td>6</td></tr> <tr> <td>f</td><td>1</td><td>2</td><td>1</td></tr> </table> (A) 0 (B) 1 (C) 2 (D) 4	x	2	4	6	f	1	2	1	B	
x	2	4	6								
f	1	2	1								
87	The standard deviation of n observations is (A) $\frac{\sum x_i - \bar{x} }{n}$ (B) $\frac{\sum (x_i - \bar{x})}{n}$ (C) $\sqrt{\frac{\sum (x_i - \bar{x})^2}{n}}$ (D) $\frac{\sum (x_i - \bar{x})^2}{n}$	C									
88	Consider the following grouped data. <table border="1"> <tr> <td>Class Interval</td><td>10–20</td><td>20–30</td><td>30–40</td></tr> <tr> <td>Frequency</td><td>1</td><td>3</td><td>4</td></tr> </table> Using class marks, the mean deviation about the mean is (A) 2.5 (B) 6.25 (C) 7.5 (D) 6.75	Class Interval	10–20	20–30	30–40	Frequency	1	3	4	B	
Class Interval	10–20	20–30	30–40								
Frequency	1	3	4								
89	The coefficient of variation is calculated as (A) $\frac{\text{SD}}{\text{Mean}} \times 100$ (B) $\frac{\text{Mean}}{\text{SD}} \times 100$ (C) $\frac{\text{Variance}}{\text{Mean}} \times 100$ (D) $\frac{\text{Range}}{\text{Mean}} \times 100$	A									
90	If each observation in a data set is multiplied by 3, then the new variance is (A) $3\sigma^2$ (B) $6\sigma^2$ (C) $9\sigma^2$ (D) $\sigma^2 + 3$	C									
91	Data A has mean 50 and standard deviation 5. Data B has mean 40 and standard deviation 8. Which data set is more consistent? (A) A (B) B (C) Both are equally consistent (D) Cannot be compared	A									

92	The coefficient of variation is a (A) Relative measure of dispersion (B) Measure of central tendency (C) Measure of range only (D) Frequency	A									
93	Consider the following grouped data. <table border="1"> <tr> <td>Class Interval</td><td>0–10</td><td>10–20</td><td>20–30</td></tr> <tr> <td>Frequency</td><td>1</td><td>2</td><td>2</td></tr> </table> Using class marks, the standard deviation is (A) 5 (B) $2\sqrt{14}$ (C) 10 (D) $14\sqrt{2}$	Class Interval	0–10	10–20	20–30	Frequency	1	2	2	B	
Class Interval	0–10	10–20	20–30								
Frequency	1	2	2								
94	If the variance of a data set is zero, then (A) All observations are equal (B) All observations are different (C) The mean is zero (D) The range is always one	A									
95	If L is the largest value and S is the smallest value, the coefficient of range is (A) $\frac{L+S}{L-S}$ (B) $\frac{L-S}{L+S}$ (C) $L-S$ (D) $\frac{L}{S}$	B									
96	For a discrete frequency distribution, the mean deviation about the mean is (A) $\frac{\sum f x-\bar{x} }{\sum f}$ (B) $\frac{\sum fx}{\sum f}$ (C) $\frac{\sum f(x-\bar{x})^2}{\sum f}$ (D) $\sum f x-\bar{x}$	A									
97	For the following frequency distribution, the mean deviation about the mean is <table border="1"> <tr> <td>x</td><td>1</td><td>2</td><td>3</td></tr> <tr> <td>f</td><td>1</td><td>1</td><td>2</td></tr> </table> (A) 0.5 (B) 0.75 (C) 1.5 (D) 2	x	1	2	3	f	1	1	2	B	
x	1	2	3								
f	1	1	2								
98	The class intervals of a grouped data are 400–450, 450–500, 500–550. The range is (A) 50 (B) 100 (C) 150 (D) 200	C									

99	In calculating a weighted mean, the weights represent (A) The deviations from the mean (B) The relative importance of the observations (C) The range of the observations (D) The variance of the observations	B	
100	The mean deviation about the mean of 1, 3, 5, 7 is (A) 1 (B) 2 (C) 3 (D) 4	B	

Government Polytechnic, Diglipur

Recruitment for the Post of Lab Technician (Computer) on Contractual Basis

Date of Examination: 19/08/2026

Exam Time: 10:00 AM - 12:00 PM

Exam Slot: A1

ANSWER KEY

#	Question	Answer Key	Remarks
1	Complete the continuous letter-cluster sequence: JAK, KBL, LCM, MDN, ? A) OEP B) NEO C) MEN D) PFQ	B	
2	Statements: 1. All Architects are Creative. 2. No Creative person is Boring. Conclusions: I. No Architect is Boring. II. Some Creative persons are Architects. A) Only conclusion I follows B) Only conclusion II follows C) Neither conclusion I nor II follows D) Both conclusions I and II follow	D	
3	A field researcher begins at Base Station Omega and travels 6 kilometres directly West. She then executes a precise 90-degree turn to her right and travels 8 kilometres. Finally, she executes another 90-degree turn to her right and walks 6 kilometres before stopping. What is her straight-line displacement distance and direction from Base Station Omega? A) 10 kilometres, North-West B) 8 kilometres, North C) 8 kilometres, South D) 14 kilometres, North-East	B	
4	Evaluate the following expression using the standard order of operations: $45 + 15 \div 3 - 2 \times 4$ A) 12 B) 34 C) 42 D) 72	C	
5	A delivery van carries four packages weighing 12 kg, 18 kg, 22 kg, and 28 kg. What is the average weight of these packages? A) 18 kg B) 20 kg C) 22 kg D) 25 kg	B	
6	Choose the unique number set that does not share the mathematical classification properties of the other groups. A) (13, 169, 1728) B) (11, 121, 1331) C) (7, 49, 343) D) (9, 81, 729)	A	
7	An office shuttle travels a total distance of 180 kilometres along a highway at a uniform speed. If it takes exactly 3 hours to reach its destination, what is the speed of the shuttle? A) 50 km/h B) 55 km/h C) 60 km/h D) 65 km/h	C	

8	Identify the term out of the given choices that is logically distinct from the other three terms in the group (Odd One Out). A) Depreciated B) Diminished C) Dwindled D) Dilated	D	
9	During a critical cross-departmental alignment briefing, a senior colleague repeatedly cuts you off, presenting your team's structural data as their own initiative. To demonstrate high social intelligence, what is your most strategic recourse? A) Interrupt them immediately to publicly demand recognition and correct the presentation slide. B) Stay silent during the meeting, but file a formal structural grievance with human resources immediately afterwards. C) Wait for them to finish, then smoothly build on their point by adding deep technical nuances of your data, establishing your team's distinct ownership naturally. D) Confront the colleague aggressively outside the conference room directly following the session to demand an apology.	C	
10	A small business owner borrows ₹10,000 from a local cooperative bank at a simple interest rate of 6% per annum. What is the total simple interest accrued over a period of 3 years? A) ₹600 B) ₹1,200 C) ₹1,800 D) ₹2,400	C	
11	How many independent meaningful English words can be formed by rearranging the letters of the word "EPRST", using each letter only once in each word? A) One B) Two C) Three D) None	C	
12	An IT security network features five data nodes connected as follows: Node A can send data only to Node B. Node B can send data to Node C and Node D. Node C can send data only to Node E. Node D can send data back to Node A. Node E does not send data. If a critical network error starts at Node D, which node is entirely safe from receiving the error? A) Node A B) Node B C) Node C D) None of the nodes	D	
13	Select the option that is related to the third number in the same way as the second number is related to the first number. (49 : 144 :: 121 : ?) A) 256 B) 324 C) 400 D) 484	B	
14	Statements: - All critical manufacturing operations are fully automated. - No fully automated operations suffer from human fatigue errors. Conclusions: - Critical manufacturing operations never suffer from human fatigue errors. - Non-critical manufacturing operations always suffer from human fatigue errors. A) Only conclusion I follows B) Only conclusion II follows C) Both conclusions I and II follow D) Neither conclusion I nor II follows	A	
15	Select the option that mirrors the exact relationship established in the initial pair: Seismograph : Earthquake :: Anemometer : _____ A) Solar Radiation B) Liquid Viscosity C) Wind Velocity D) Atmospheric Moisture	C	

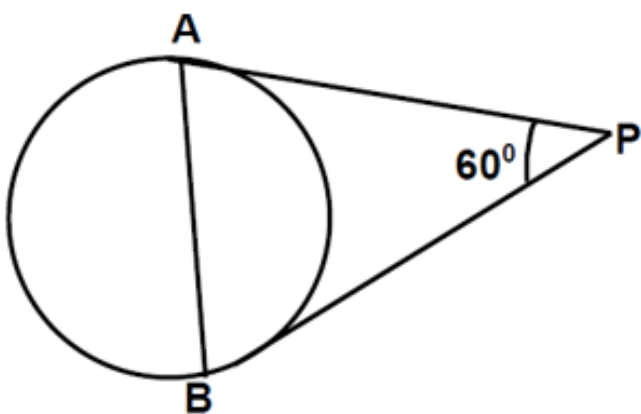
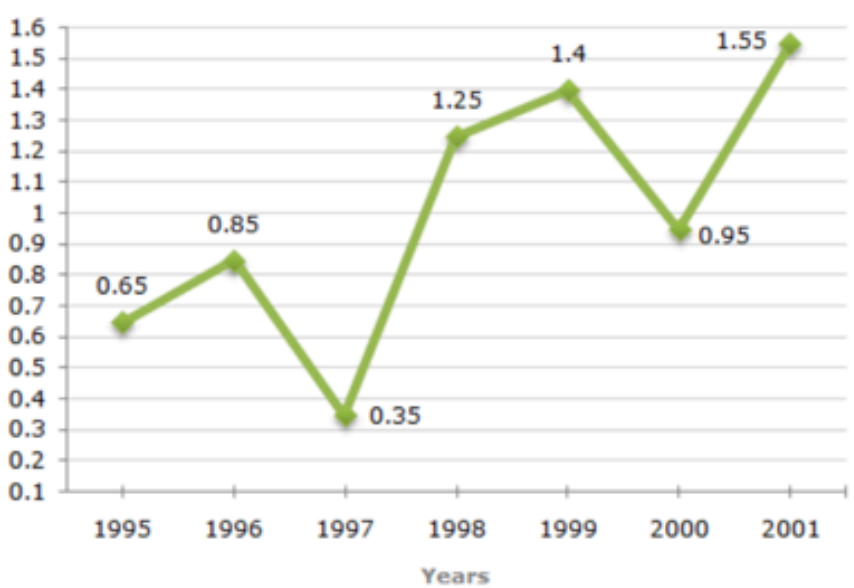
16	Statement: Should municipal governments completely ban personal vehicular traffic from dense historical city centers, replacing it with free public transit systems? Arguments: I. Yes, it drastically lowers local carbon emissions, halts structural degradation of historical architecture caused by vibrations, and creates safe urban spaces for commerce. II. No, it infringes on personal transport autonomy and threatens local retail businesses that rely heavily on affluent drive-in customers. A) Only argument I is strong B) Only argument II is strong C) Both arguments I and II are strong D) Neither argument I nor II is strong	C	
17	Which of the following numbers is completely divisible by 3 without leaving any mathematical remainder? A) 2,543 B) 4,712 C) 6,132 D) 8,015	C	
18	Five colleagues (A, B, C, D, and E) sit in a straight row facing North during a presentation. 'A' sits exactly to the immediate left of 'B'. 'C' sits halfway between 'D' and 'E'. If 'E' sits on the absolute right end of the row and 'B' sits to the immediate left of 'C', who occupies the absolute left end of the row? A) A B) B C) D D) E	C	
19	A visual matrix shows a line pattern that rotates 30° clockwise in each consecutive cell. If Cell 1 is at 0° (pointing North), Cell 2 is at 30°, Cell 3 is at 60°, and Cell 4 is at 90°, what must the pattern look like in Cell 6 to complete the trend? A) A line oriented at 120° B) A line oriented at 150° C) A line oriented at 180° (pointing South) D) A line oriented back at 0°	B	
20	Consider the following transformation pattern: A solid black circle inside a <u>large blank square</u> <u>changes</u> into a solid black square inside a large blank circle. Following this exact rule, what will a solid black triangle inside a large blank hexagon change into? A) A solid black hexagon inside a large blank triangle B) A solid black triangle inside a large blank square C) A solid black circle inside a large blank triangle D) A hollow triangle inside a solid black hexagon	A	
21	Which among the following has the highest Global Warming Potential (GWP)? A) Carbon dioxide B) Methane C) Nitrous oxide D) Sulphur hexafluoride	D	
22	The headquarters of the International Atomic Energy Agency (IAEA) is located in: A) Geneva B) Vienna C) Paris D) New York	B	
23	The Constitution of India came into force on: A) 26 January 1950 B) 15 August 1947 C) 26 November 1949 D) 2 October 1950	A	
24	Which planet is known as the Red Planet? A) Venus B) Saturn C) Jupiter D) Mars	D	

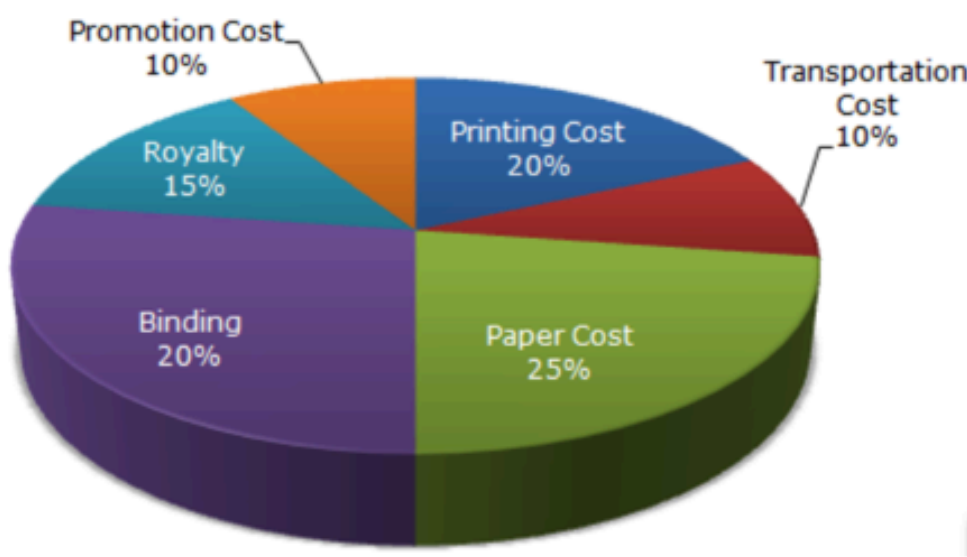
25	Which Schedule of the Constitution contains the list of States and Union Territories? A) First Schedule B) Second Schedule C) Fifth Schedule D) Seventh Schedule	A	
26	The Andaman and Nicobar Islands are separated by which channel? A) Duncan Passage B) Nine Degree Channel C) Ten Degree Channel D) Palk Strait	B	
27	The SI unit of force is: A) Newton B) Joule C) Watt D) Pascal	A	
28	Who is known as the Father of the Indian Constitution? A) Jawaharlal Nehru B) B.R. Ambedkar C) Rajendra Prasad D) Sardar Patel	B	
29	The Ramsar Convention is associated with: A) Biodiversity conservation B) Climate change C) Wetland conservation D) Desertification	C	
30	The term "Carbon Sink" refers to: A) A source of carbon emissions B) A process of extracting fossil fuels C) A natural or artificial reservoir that absorbs more carbon than it releases D) A carbon-based industrial product	C	
31	Which Viceroy of India was assassinated at Hope Town, Port Blair, in 1872? A) Lord Curzon B) Lord Mayo C) Lord Ripon D) Lord Dufferin	B	
32	Which organization publishes the World Economic Outlook Report? A) IMF B) WTO C) OECD D) UNCTAD	A	
33	The term "Blue Economy" mainly refers to: A) Mining resources B) Ocean-based sustainable economic development C) Banking reforms D) Digital economy	B	
34	Which committee recommended the establishment of Panchayati Raj Institutions? A) Sarkaria Committee B) Balwant Rai Mehta Committee C) Punchhi Commission D) Ashok Mehta Committee	B	

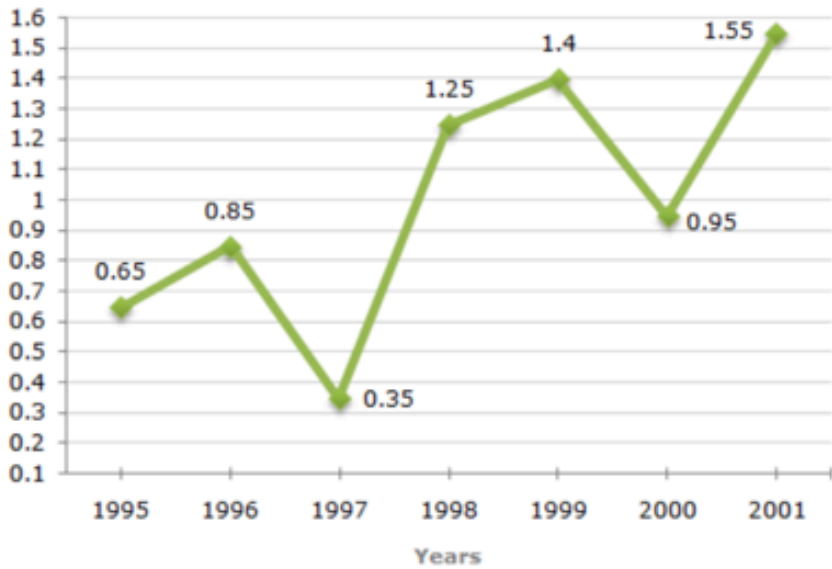
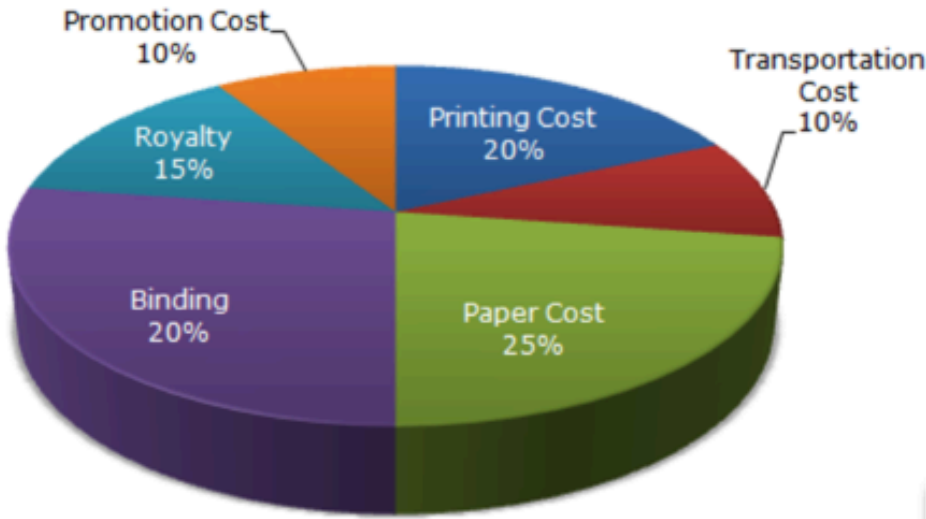
35	Which Article empowers the President of India to promulgate Ordinances? A) Article 123 B) Article 352 C) Article 356 D) Article 360	A	
36	The Fiscal Responsibility and Budget Management (FRBM) Act primarily aims to: A) Increase tax rates B) Control fiscal deficit C) Increase imports D) Privatize public sector enterprises	B	
37	Which among the following is not a greenhouse gas? A) Methane B) Nitrogen C) Nitrous Oxide D) Carbon Dioxide	B	
38	Which organization releases the Human Development Index (HDI)? A) World Bank B) UNDP C) IMF D) WHO	B	
39	The Global Hunger Index is jointly published by: A) FAO and UNESCO B) Concern Worldwide and Welthungerhilfe C) IMF and World Bank D) WHO and UNICEF	B	
40	Which Constitutional Amendment introduced the Goods and Services Tax (GST)? A) 99th Amendment B) 101st Amendment C) 102nd Amendment D) 104th Amendment	B	
41	Choose the correct word: The scientist made an important _____ in the field of medicine. A) discovery B) discover C) discovering D) discovered	A	
42	Fill in the blank: If you work hard, you _____ succeed. A) would B) will C) might have D) had	B	
43	Choose the antonym of "Indignant". A) Resentful B) Outraged C) Calm D) Offended	C	
44	Choose the meaning of the idiom "Break the ice". A) To start a conversation B) To damage something C) To end a relationship D) To create trouble	A	

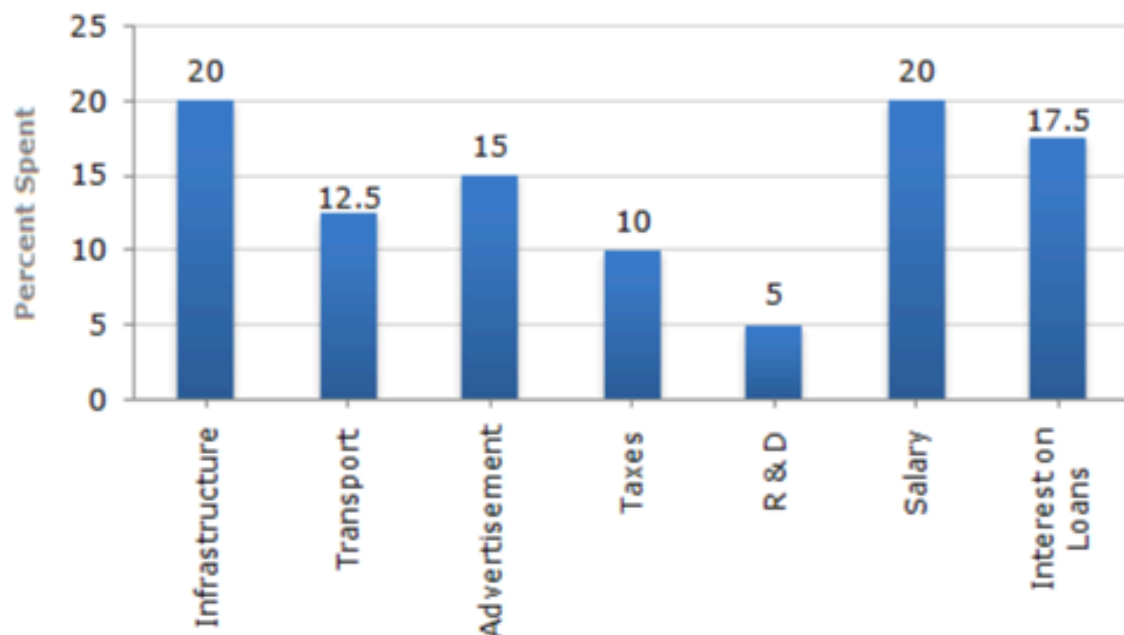
45	One-word substitution: " A person who studies fungi" A) Microbiologist B) Mycologist C) Botanist D) Virologist	B	
46	Fill in the blank: The report was submitted _____ the authority. A) from B) with C) to D) in	C	
47	Choose the synonym of "Diligent". A) Careless B) Hardworking C) Lazy D) Weak	B	
48	Read the passage and answer: <i>"A laboratory requires discipline, accuracy, and responsibility. Proper handling of equipment and following safety rules help prevent accidents. A skilled technician always maintains records carefully."</i> A skilled technician maintains: A) Records carefully B) Only equipment C) Personal opinions D) Unnecessary documents	A	
49	Meaning of idiom "Once in a blue moon": A) Regularly B) Rarely C) Quickly D) Immediately	B	
50	Choose the synonym of "Mammoth". A) wild B) greedy C) straight D) huge	D	
51	Arrange the sentences in meaningful order: P. The samples were collected carefully. Q. The results were analysed. R. The experiment was performed. S. The final report was prepared. A) R-P-Q-S B) P-R-S-Q C) Q-S-R-P D) S-Q-P-R	A	
52	Choose the antonym of "Ravenous". A) Sated B) Ascetic C) Swollen D) Pleased	A	
53	Improve the sentence: "She is good in handling instruments." A) She is good at handling instruments. B) She is good on handling instruments. C) She is good with handling instruments. D) She is good for handling instruments.	A	

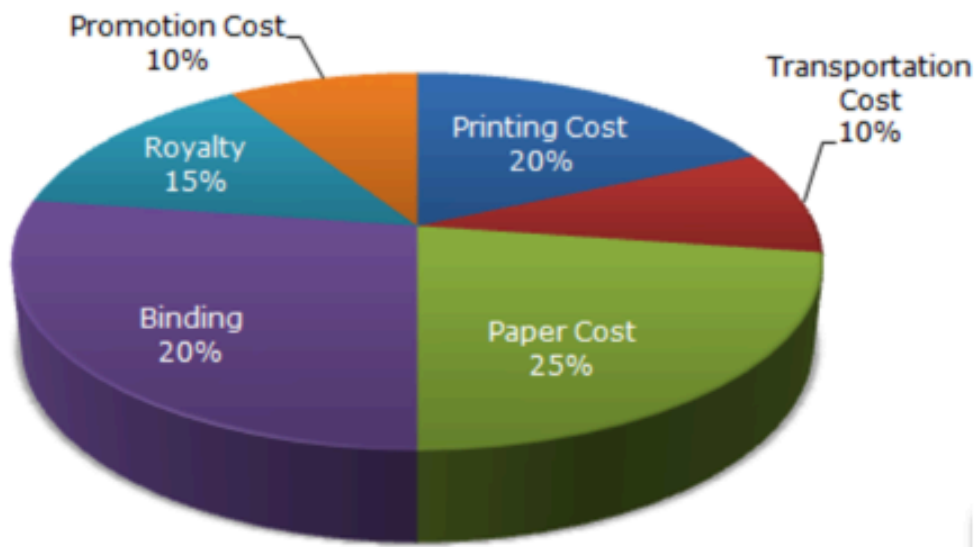
54	Choose the antonym of "Expand". A) Increase B) Stretch C) Contract D) Develop	C	
55	Cloze passage: "The laboratory was equipped _____ advanced instruments for research." A) at B) from C) by D) with	D	
56	One-word substitution: "One who cannot read or write" A) Intelligent B) Scholar C) Illiterate D) Educated	C	
57	Choose the correctly spelt word. A) Maintainence B) Maintanance C) Maintenance D) Maintenence	C	
58	Meaning of the idiom "gift of the gab": A) a person with fluency in speech B) Talent for giving expensive gifts C) Habit of talking loudly D) Skill in writing beautiful letters	A	
59	Choose the correctly spelt word. A) Laboratory B) Laboratary C) Labrotory D) Labaratory	A	
60	Choose the correct use of homonyms: A) The patient was weak after the week-long treatment. B) The patient was week after the weak treatment. C) The week patient completed the work. D) The weak was very long.	A	

61	In the above sided figure, PA and PB are tangents such that $PA = 9\text{cm}$ and $\angle APB = 60^\circ$.  Find the length of the chord AB. A. 4 cm B. 7 cm C. 6 cm D. 9 cm	D	
62	A truck covers a distance of 550 metres in one minute whereas a bus covers a distance of 33 kms in 45 minutes. The ratio of their speeds is A. 3:4 B. 4:3 C. 3:5 D. 50:3	A	
63	The following line graph gives the ratio of the amounts of imports by a company to the amount of exports from that company over the period from 1995 to 2001. Ratio of Value of imports to Exports by a Company over the Years.  If the imports in 1998 was Rs. 250 crores and the total exports in the years 1998 and 1999 together was Rs. 500 crores, then the imports in 1999 was? A. Rs. 250 crores B. Rs. 300 crores C. Rs. 357 crores D. Rs. 420 crores	D	
64	If $\triangle ABC$ is right angled at C, then the value of $\cos (A+B)$ is A. 0 B. 1 C. $\frac{1}{2}$ D. $\frac{\sqrt{3}}{2}$	A	

65	The following pie-chart shows the percentage distribution of the expenditure incurred in publishing a book. Study the pie-chart and the answer the questions based on it. Various Expenditures (in percentage) Incurred in Publishing a Book  If for a certain quantity of books, the publisher has to pay Rs. 30,600 as printing cost, then what will be amount of royalty to be paid for these books? A. Rs. 19,450 B. Rs. 21,200 C. Rs. 22,950 D. Rs. 26,150	C	
66	A vertical pole of length 20 m casts a shadow 10 m long on the ground and at the same time tower casts a shadow 50 m long, then the height of the tower. A. 100 m B. 120 m C. 25 m D. none of these	A	
67	Anand and Deepak started a business investing Rs. 22500/- and Rs. 35000/- respectively. Out of a total profit of Rs. 13800/- Deepak's share is A. Rs. 5400/- B. Rs. 7200/- C. Rs. 8400/- D. Rs. 9600/-	C	
68	The value of $(\sin 30^\circ + \cos 30^\circ) - (\sin 60^\circ + \cos 60^\circ)$ is A. -1 B. 0 C. 1 D. 2	B	
69	The ratio of the volumes of two spheres is 8: 27. The ratio between their surface areas is A. 2 : 3 B. 4 : 27 C. 8 : 9 D. 4 : 9	D	
70	If $\triangle ABC \sim \triangle QRP$, $\frac{ar(ABC)}{ar(PQR)} = \frac{9}{4}$, $AB = 18$ cm and $BC = 15$ cm, then PR is equal to A. 10 cm B. 12 cm C. $\frac{20}{3}$ cm D. 8 cm	A	

71	Which one of the following rational number is a non-terminating decimal expansion? A. $\frac{33}{50}$ B. $\frac{66}{180}$ C. $\frac{6}{15}$ D. $\frac{41}{1000}$	B	
72	What percentage of 7.2kg is 18gms? A. 0.025% B. 0.25% C. 2.5% D. 25%	D	
73	The following line graph gives the ratio of the amounts of imports by a company to the amount of exports from that company over the period from 1995 to 2001. Ratio of Value of imports to Exports by a Company over the Years.  The imports were minimum proportionate to the exports of the company in the year? A. 1995 B. 1996 C. 1997 D. 2000	C	
74	The following pie-chart shows the percentage distribution of the expenditure incurred in publishing a book. Study the pie-chart and the answer the questions based on it. Various Expenditures (in percentage) Incurred in Publishing a Book  The price of the book is marked 20% above the C.P. If the marked price of the book is Rs. 180, then what is the cost of the paper used in a single copy of the book? A. Rs. 36 B. Rs. 37.50 C. Rs. 42 D. Rs. 44.25	B	

75	The bar graph given below shows the percentage distribution of the total expenditures of a company under various expense heads during 2003. Percentage Distribution of Total Expenditure of a Company  What is the ratio of the total expenditure on infrastructure and transport to the total expenditure on taxes and interest on ? A. 5:4 B. 8:7 C. 9:7 D. 13:11	D																																																																					
76	What is the unit digit in the product $(3^{65} \times 6^{59} \times 7^{71})$? A. 1 B. 2 C. 4 D. 6	C																																																																					
77	The following table gives the percentage of marks obtained by seven students in six different subjects in an examination. The Numbers in the Brackets give the Maximum Marks in Each Subject. <table border="1" data-bbox="493 1748 1344 2329"><thead><tr><th rowspan="3">Student</th><th colspan="6">Subject (Max. Marks)</th></tr><tr><th> Maths</th><th> Chemistry</th><th> Physics</th><th>Geography</th><th>History</th><th>Computer Science</th></tr><tr><th>(150)</th><th>(130)</th><th>(120)</th><th>(100)</th><th>(60)</th><th>(40)</th></tr></thead><tbody><tr><td>Ayush</td><td>90</td><td>50</td><td>90</td><td>60</td><td>70</td><td>80</td></tr><tr><td>Aman</td><td>100</td><td>80</td><td>80</td><td>40</td><td>80</td><td>70</td></tr><tr><td>Sajal</td><td>90</td><td>60</td><td>70</td><td>70</td><td>90</td><td>70</td></tr><tr><td>Rohit</td><td>80</td><td>65</td><td>80</td><td>80</td><td>60</td><td>60</td></tr><tr><td>Muskan</td><td>80</td><td>65</td><td>85</td><td>95</td><td>50</td><td>90</td></tr><tr><td>Tanvi</td><td>70</td><td>75</td><td>65</td><td>85</td><td>40</td><td>60</td></tr><tr><td>Tarun</td><td>65</td><td>35</td><td>50</td><td>77</td><td>80</td><td>80</td></tr></tbody></table> What are the average marks obtained by all the seven students in Physics? (rounded off to two digit after decimal) A. 77.26 B. 89.14 C. 91.37 D. 96.11	Student	Subject (Max. Marks)						 Maths	 Chemistry	 Physics	Geography	History	Computer Science	(150)	(130)	(120)	(100)	(60)	(40)	Ayush	90	50	90	60	70	80	Aman	100	80	80	40	80	70	Sajal	90	60	70	70	90	70	Rohit	80	65	80	80	60	60	Muskan	80	65	85	95	50	90	Tanvi	70	75	65	85	40	60	Tarun	65	35	50	77	80	80	B	
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78	A wire is looped in the form of a circle of radius 28 cm. It is rebent into a square form. Determine the length of the side of the square. A. 42 cm B. 44 cm C. 46 cm D. 48 cm	B	
79	TP and TQ are the two tangents to a circle with center O so that angle $\angle POQ = 130^\circ$. Find $\angle PTQ$. A. 50° B. 70° C. 80° D. None of these	A	
80	The following pie-chart shows the percentage distribution of the expenditure incurred in publishing a book. Study the pie-chart and the answer the questions based on it. Various Expenditures (in percentage) Incurred in Publishing a Book  What is the central angle of the sector corresponding to the expenditure incurred on Royalty? A. 15° B. 24° C. 54° D. 48°	C	
81	A company wants to extend the distance of an Ethernet cable beyond its normal limit. Which device should be used? A. Router B. Repeater C. Gateway D. Bridge	B	
82	Which feature of computers makes them suitable for weather forecasting? A. Large storage and high-speed processing B. Loud speakers C. Touchscreen display D. Small keyboard	A	

83	Which paradigm organizes software around reusable objects? A. Procedural Programming B. Object-Oriented Programming C. Assembly language Programming D. Structured Programming.	B	
84	Which command searches for a pattern in a text file? A. find B. grep C. locate D. search	B	
85	Which command displays the contents of a text file? A. cat B. cp C. pwd D. mkdir	A	
86	Which representation is easier for non-technical people to understand? A. Machine code B. Algorithm C. Flowchart D. Assembly language	C	
87	Which command deletes files in UNIX? A. del B. erase C. rm D. remove	C	
88	Which statement about a hub is TRUE? A. It learns MAC addresses. B. It forwards data intelligently. C. It broadcasts incoming data to all connected ports. D. It routes packets between different networks.	C	
89	Which property of an algorithm states that it must end after a finite number of steps? A. Definiteness B. Effectiveness C. Finiteness D. Input	C	

90	Which command displays the current working directory? A. cd B. pwd C. ls D. dir	B	
91	Why are programming paradigms important? A. They define how programmers design and implement solutions. B. They increase processor speed. C. They replace programming languages. D. They eliminate the need for algorithms.	A	
92	Which type of operating system is mainly used in network servers? A. Network Operating System (NOS) B. Batch OS C. Embedded OS D. Single-tasking OS	A	
93	Which protocol is generally preferred for real-time applications like video streaming? A. TCP B. UDP C. HTTP D. FTP	B	
94	Which component is directly installed on the CPU socket of the motherboard? A. RAM B. Hard Disk C. Processor D. Monitor	C	
95	Which operating system gives each user a small time slice of CPU? A. Batch OS B. Time-sharing OS C. Distributed OS D. Embedded OS	B	

96	Which command checks whether a remote host is reachable over the network? A. ping B. ssh C. netstat D. ftp	A	
97	The main purpose of network redundancy is to A. Increase electricity consumption B. Ensure continuous operation during failures C. Reduce storage capacity D. Slow down network traffic	B	
98	Which device can connect two LAN segments using MAC addresses? A. Bridge B. Router C. Gateway D. Repeater	A	
99	Which command displays information about currently running processes? A. ps B. cp C. pwd D. ls	A	
100	Which of the following is an example of a Single-user Multitasking Operating System? A. MS-DOS B. Windows 11 C. UNIX (Multi-user mode) D. Batch OS	B	

Government Polytechnic, Diglipur

Recruitment for the Post of Lab Technician (Civil) on Contractual Basis

Date of Examination: 19/08/2026

Exam Time: 10:00 AM - 12:00 PM

Exam Slot: A1

ANSWER KEY

#	Question	Answer Key	Remarks
1	Statements: 1. All critical manufacturing operations are fully automated. 2. No fully automated operations suffer from human fatigue errors. Conclusions: I. Critical manufacturing operations never suffer from human fatigue errors. II. Non-critical manufacturing operations always suffer from human fatigue errors. A) Only conclusion I follows B) Only conclusion II follows C) Both conclusions I and II follow D) Neither conclusion I nor II follows	A	
2	Select the option that mirrors the exact relationship established in the initial pair: Seismograph : Earthquake :: Anemometer : _____ A) Solar Radiation B) Liquid Viscosity C) Wind Velocity D) Atmospheric Moisture	C	
3	Statement: Should municipal governments completely ban personal vehicular traffic from dense historical city centers, replacing it with free public transit systems? Arguments: I. Yes, it drastically lowers local carbon emissions, halts structural degradation of historical architecture caused by vibrations, and creates safe urban spaces for commerce. II. No, it infringes on personal transport autonomy and threatens local retail businesses that rely heavily on affluent drive-in customers. A) Only argument I is strong B) Only argument II is strong C) Both arguments I and II are strong D) Neither argument I nor II is strong	C	
4	Statements: 1. All Architects are Creative. 2. No Creative person is Boring. Conclusions: I. No Architect is Boring. II. Some Creative persons are Architects. A) Only conclusion I follows B) Only conclusion II follows C) Neither conclusion I nor II follows D) Both conclusions I and II follow	D	
5	A visual matrix shows a line pattern that rotates 30° clockwise in each consecutive cell. If Cell 1 is at 0° (pointing North), Cell 2 is at 30°, Cell 3 is at 60°, and Cell 4 is at 90°, what must the pattern look like in Cell 6 to complete the trend? A) A line oriented at 120° B) A line oriented at 150° C) A line oriented at 180° (pointing South) D) A line oriented back at 0°	B	
6	Which of the following numbers is completely divisible by 3 without leaving any mathematical remainder? A) 2,543 B) 4,712 C) 6,132 D) 8,015	C	

7	A retailer purchases a desk organizer for ₹600 and sells it to a customer for ₹750. What is the retailer's profit percentage? A) 15% B) 20% C) 25% D) 30%	C	
8	If 6 data entry operators can type a specialized administrative report in 8 hours, how many hours will it take 4 operators to complete the exact same report working at the same speed? A) 10 hours B) 12 hours C) 14 hours D) 16 hours	B	
9	Choose the number pair that is distinct from the others in the given set (Odd Pair Out). A) (14 - 196) B) (16 - 256) C) (18 - 324) D) (22 - 464)	D	
10	The total number of employees in an office is 84. If the ratio of male employees to female employees is $\frac{5}{7}$, what is the exact number of female employees? A) 35 B) 44 C) 49 D) 56	C	
11	Five colleagues (A, B, C, D, and E) sit in a straight row facing North during a presentation. 'A' sits exactly to the immediate left of 'B'. 'C' sits halfway between 'D' and 'E'. If 'E' sits on the absolute right end of the row and 'B' sits to the immediate left of 'C', who occupies the absolute left end of the row? A) A B) B C) D D) E	C	
12	Identify the single letter that can be removed from <u>all of</u> the following five words to form entirely new, grammatically correct English words in every single instance: FLIGHT, BRAND, STRAY, BLINK, CHAIR A) L B) R C) A D) I	B	
13	A field researcher begins at Base Station Omega and travels 6 kilometres directly West. She then executes a precise 90-degree turn to her right and travels 8 kilometres. Finally, she executes another 90-degree turn to her right and walks 6 kilometres before stopping. What is her straight-line displacement distance and direction from Base Station Omega? A) 10 kilometres, North-West B) 8 kilometres, North C) 8 kilometres, South D) 14 kilometres, North-East	B	
14	Solve for the unknown variable x in the following linear equation: $3x + 14 = 35$ A) 5 B) 7 C) 9 D) 11	B	
15	Evaluate the following expression using the standard order of operations: $45 + 15 \div 3 - 2 \times 4$ A) 12 B) 34 C) 42 D) 72	C	

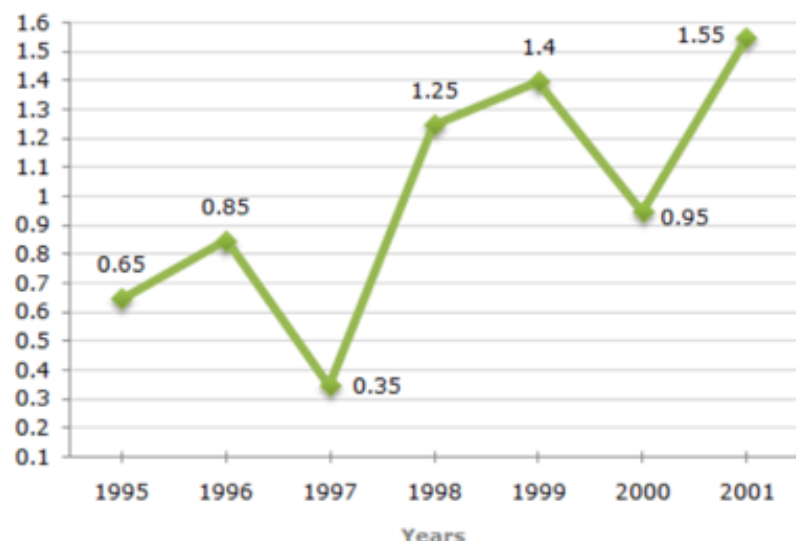
16	Select the option that is related to the third number in the same way as the second number is related to the first number. (49 : 144 :: 121 : ?) A) 256 B) 324 C) 400 D) 484	B	
17	In an international research facility, 50 scientists speak French, 40 speak German, and 30 speak Spanish. 15 speak both French and German, 10 speak both German and Spanish, and 12 speak both French and Spanish. If 5 scientists speak all three languages, how many total unique scientists are there in this group? A) 88 B) 93 C) 120 D) 135	A	
18	Choose the word out of the given options which is least like the other words in the group (Odd One Out). A) Epinephrine B) Cortisol C) Thyroxine D) Pepsin	D	
19	A small business owner borrows ₹10,000 from a local cooperative bank at a simple interest rate of 6% per annum. What is the total simple interest accrued over a period of 3 years? A) ₹600 B) ₹1,200 C) ₹1,800 D) ₹2,400	C	
20	Choose the unique number set that does not share the mathematical classification properties of the other groups. A) (13, 169, 1728) B) (11, 121, 1331) C) (7, 49, 343) D) (9, 81, 729)	A	
21	The Global Hunger Index is jointly published by: A) FAO and UNESCO B) Concern Worldwide and Welthungerhilfe C) IMF and World Bank D) WHO and UNICEF	B	
22	The headquarters of the International Atomic Energy Agency (IAEA) is located in: A) Geneva B) Vienna C) Paris D) New York	B	
23	Which river is known as the 'Ganga of the South'? A) Krishna B) Kaveri C) Godavari D) Narmada	C	
24	Which organization releases the Human Development Index (HDI)? A) World Bank B) UNDP C) IMF D) WHO	B	
25	Which of the following rivers does not originate in India? A) Godavari B) Krishna C) Brahmaputra D) Mahanadi	C	

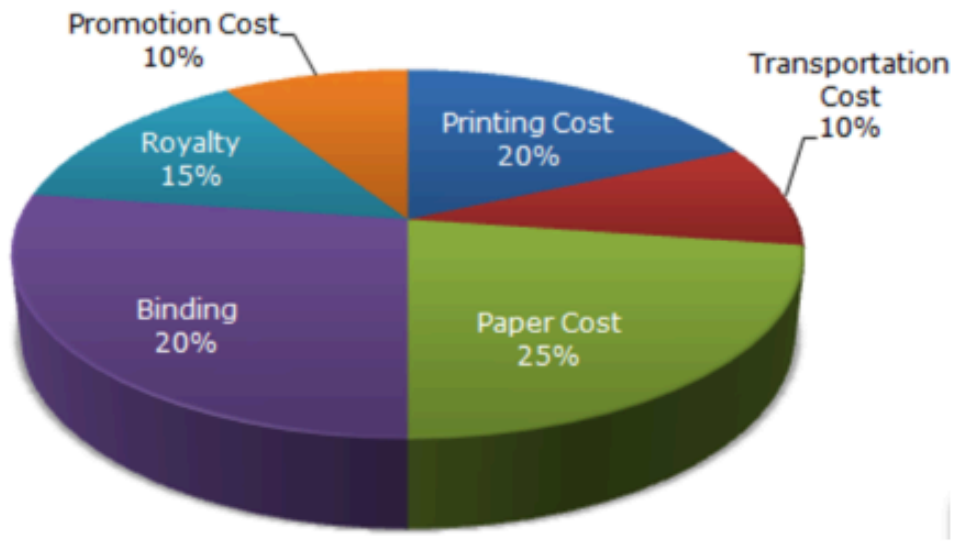
26	Which organization publishes the World Economic Outlook Report? A) IMF B) WTO C) OECD D) UNCTAD	A	
27	Which is the largest organ in the human body? A) Heart B) Brain C) Skin D) Liver	C	
28	Which Viceroy of India was assassinated at Hope Town, Port Blair, in 1872? A) Lord Curzon B) Lord Mayo C) Lord Ripon D) Lord Dufferin	B	
29	The Fiscal Responsibility and Budget Management (FRBM) Act primarily aims to: A) Increase tax rates B) Control fiscal deficit C) Increase imports D) Privatize public sector enterprises	B	
30	Which gas is most abundant in Earth's atmosphere? A) Nitrogen B) Oxygen C) Carbon dioxide D) Hydrogen	A	
31	Which instrument is used to measure relative humidity? A) Barometer B) Hydrometer C) Hygrometer D) Lactometer	C	
32	The term "Judicial Review" in India has been borrowed from: A) United Kingdom B) Canada C) Australia D) United States of America	D	
33	The headquarters of the International Court of Justice is situated in: A) Geneva B) The Hague C) Brussels D) New York	B	
34	Which Constitutional Amendment introduced the Goods and Services Tax (GST)? A) 99th Amendment B) 101st Amendment C) 102nd Amendment D) 104th Amendment	B	
35	The Constitution of India came into force on: A) 26 January 1950 B) 15 August 1947 C) 26 November 1949 D) 2 October 1950	A	

36	Which Fundamental Right abolishes untouchability? A) Right to Equality B) Right to Freedom C) Right against Exploitation D) Cultural and Educational Rights	A	
37	Who wrote the National Anthem of India? A) Bankim Chandra Chattopadhyay B) Rabindranath Tagore C) Sarojini Naidu D) Subhas Chandra Bose	B	
38	The headquarters of the United Nations is located in: A) Geneva B) Paris C) Vienna D) New York	D	
39	Which Article of the Constitution provides for the establishment of the Finance Commission? A) Article 280 B) Article 324 C) Article 148 D) Article 368	A	
40	Which of the following indices is released by the World Economic Forum? A) Global Innovation Index B) Global Competitiveness Index C) Human Development Index D) Multidimensional Poverty Index	B	
41	Improve the sentence: "He discussed about the issue." A) He discussed on the issue. B) He discussed the issue. C) He discussed regarding the issue. D) He discussed about issue.	B	
42	Choose the correct sentence. A) She don't know the answer. B) She doesn't knows the answer. C) She not know the answer. D) She doesn't know the answer.	D	
43	One-word substitution: " A person who studies fungi" A) Microbiologist B) Mycologist C) Botanist D) Virologist	B	
44	Choose the correctly spelt word. A) Laboratory B) Laboratary C) Labrotory D) Labaratory	A	
45	Change into passive voice: "The students will complete the assignment." A) The assignment will be completed by the students. B) The assignment completed the students. C) The students will be completed by the assignment. D) The assignment was completed by students.	A	

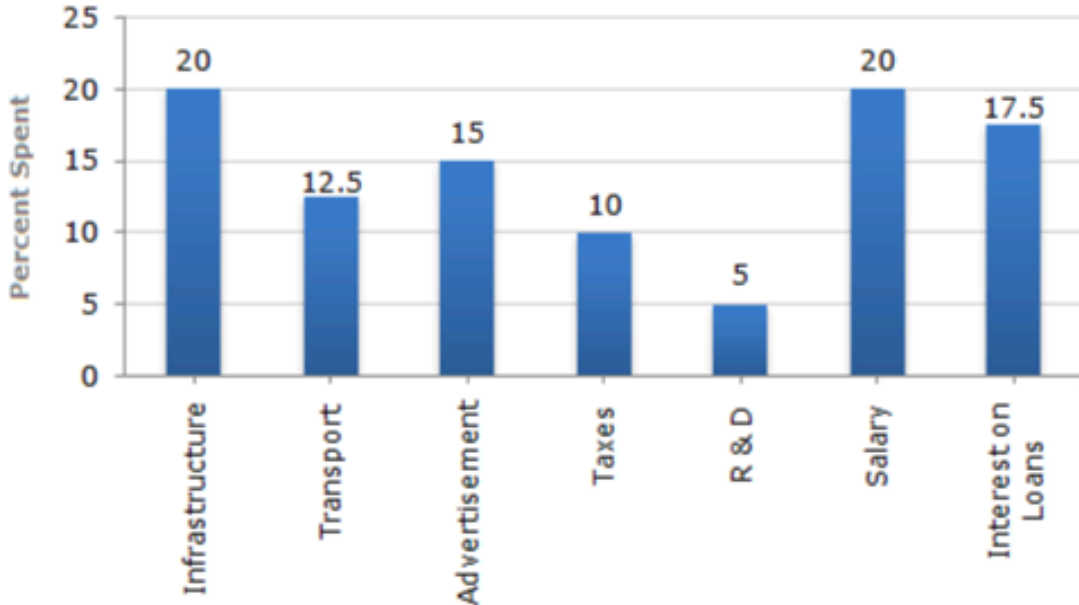
46	Change into indirect speech: He said, "I am preparing the report." A) He said that I am preparing the report. B) He said that he was preparing the report. C) He says that he was preparing the report. D) He said that he is preparing the report.	B	
47	Fill in the blank: The machine stopped working _____ a technical fault. A) due to B) because C) despite D) although	A	
48	Choose the synonym of "Appease". A) Soothe B) Aggravate C) Reject D) Disturb	A	
49	Choose the antonym of "Expand". A) Increase B) Stretch C) Contract D) Develop	C	
50	Choose the correctly spelt word. A) Maintainence B) Maintanance C) Maintenance D) Maintenance	C	
51	Meaning of idiom "Once in a blue moon": A) Regularly B) Rarely C) Quickly D) Immediately	B	
52	Choose the correct word: The scientist made an important _____ in the field of medicine. A) discovery B) discover C) discovering D) discovered	A	
53	Fill in the blank: The technician is responsible _____ maintaining laboratory records. A) for B) of C) with D) by	A	
54	Choose the antonym of "Scarce". A) Rare B) Limited C) Abundant D) Insufficient	C	
55	The laboratory assistant should handle chemicals with: A) Negligence B) Carelessness C) Caution D) Delay	C	

56	Fill in the blank: The report was submitted _____ the authority. A) from B) with C) to D) in	C	
57	Arrange the sentences: P. He applied for the post. Q. He attended the interview. R. He received the appointment letter. S. He was selected. A) Q-P-S-R B) P-Q-S-R C) S-R-P-Q D) R-S-Q-P	B	
58	Cloze passage: "The laboratory was equipped _____ advanced instruments for research." A) at B) from C) by D) with	D	
59	Improve the sentence: "She is good in handling instruments." A) She is good at handling instruments. B) She is good on handling instruments. C) She is good with handling instruments. D) She is good for handling instruments.	A	
60	One-word substitution: "One who cannot read or write" A) Intelligent B) Scholar C) Illiterate D) Educated	A	
61	If the HCF of two numbers is 1, then the two numbers are called A. composite B. relatively prime or co-prime C. perfect D. irrational numbers	B	
62	Which one of the following rational number is a non-terminating decimal expansion? A. $\frac{33}{50}$ B. $\frac{66}{180}$ C. $\frac{6}{15}$ D. $\frac{41}{1000}$	B	
63	A, B and C can complete a piece of work in 24, 6, and 12 days respectively. Working together, they will complete the same work in A. $\frac{1}{24}$ day B. $\frac{7}{24}$ day C. $3\frac{3}{7}$ days D. 4 days	C	

64	What percentage of 7.2kg is 18gms? A. 0.025% B. 0.25% C. 2.5% D. 25%	D																																																																					
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66	Seats for Mathematics, Physics and Biology in a school are in the ratio 5:7:8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increased seats? A. 2:3:4 B. 6:7:8 C. 6:8:9 D. None of these	A																																																																					
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69	In triangles ABC and DEF, $\angle B = \angle E$, $\angle F = \angle C$ and $AB = 3 DE$. Then, the two triangles are A. congruent but not similar B. similar but not congruent C. neither congruent nor similar D. congruent as well as similar	B	
70	The following pie-chart shows the percentage distribution of the expenditure incurred in publishing a book. Study the pie-chart and the answer the questions based on it. Various Expenditures (in percentage) Incurred in Publishing a Book  What is the central angle of the sector corresponding to the expenditure incurred on Royalty? A. 15° B. 24° C. 54° D. 48°	C	
71	The areas of two similar triangles are in the ratio 4 : 9. The corresponding sides of these triangles are in the ratio A. 2 : 3 B. 4 : 9 C. 81 : 16 D. 16 : 81	A	
72	Find the length of tangent drawn to a circle with radius 7 cm from a point 25 cm away from the centre. A. 24 cm B. 27 cm C. 26 cm D. 25 cm	A	
73	The lengths of the diagonals of a rhombus are 16 cm and 12 cm. Then, the length of the side of the rhombus is A. 9 cm B. 10 cm C. 8 cm D. 20 cm	B	

74	The 10th term of the AP: 5, 8, 11, 14, _____ is A. 32 B. 35 C. 38 D. 185	A																																																																					
75	The following table shows the number of Laptops sold by five different stores A-E during the five different months from January till May in the year 2025. Based on the data in the table, answer the questions that follow: Store-wise sale of Laptops <table><tr><th rowspan="2">Store</th><th colspan="5">Month</th></tr><tr><th>January</th><th>February</th><th>March</th><th>April</th><th>May</th></tr><tr><td>A</td><td>430</td><td>376</td><td>440</td><td>346</td><td>408</td></tr><tr><td>B</td><td>312</td><td>506</td><td>336</td><td>380</td><td>366</td></tr><tr><td>C</td><td>370</td><td>556</td><td>470</td><td>324</td><td>460</td></tr><tr><td>D</td><td>428</td><td>360</td><td>530</td><td>356</td><td>306</td></tr><tr><td>E</td><td>420</td><td>382</td><td>384</td><td>484</td><td>500</td></tr></table> What is the average number of Laptops sold by store C in February, March and April together? A. 390 B. 450 C. 480 D. 410	Store	Month					January	February	March	April	May	A	430	376	440	346	408	B	312	506	336	380	366	C	370	556	470	324	460	D	428	360	530	356	306	E	420	382	384	484	500	B																												
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76	The following table gives the percentage of marks obtained by seven students in six different subjects in an examination. The Numbers in the Brackets give the Maximum Marks in Each Subject. <table><tr><th rowspan="3">Student</th><th colspan="6">Subject (Max. Marks)</th></tr><tr><th> Maths</th><th> Chemistry</th><th> Physics</th><th>Geography</th><th>History</th><th>Computer Science</th></tr><tr><th>(150)</th><th>(130)</th><th>(120)</th><th>(100)</th><th>(60)</th><th>(40)</th></tr><tr><td>Ayush</td><td>90</td><td>50</td><td>90</td><td>60</td><td>70</td><td>80</td></tr><tr><td>Aman</td><td>100</td><td>80</td><td>80</td><td>40</td><td>80</td><td>70</td></tr><tr><td>Sajal</td><td>90</td><td>60</td><td>70</td><td>70</td><td>90</td><td>70</td></tr><tr><td>Rohit</td><td>80</td><td>65</td><td>80</td><td>80</td><td>60</td><td>60</td></tr><tr><td>Muskan</td><td>80</td><td>65</td><td>85</td><td>95</td><td>50</td><td>90</td></tr><tr><td>Tanvi</td><td>70</td><td>75</td><td>65</td><td>85</td><td>40</td><td>60</td></tr><tr><td>Tarun</td><td>65</td><td>35</td><td>50</td><td>77</td><td>80</td><td>80</td></tr></table> What are the average marks obtained by all the seven students in Physics? (rounded off to two <u>digit</u> after decimal) A. 77.26 B. 89.14 C. 91.37 D. 96.11	Student	Subject (Max. Marks)						 Maths	 Chemistry	 Physics	Geography	History	Computer Science	(150)	(130)	(120)	(100)	(60)	(40)	Ayush	90	50	90	60	70	80	Aman	100	80	80	40	80	70	Sajal	90	60	70	70	90	70	Rohit	80	65	80	80	60	60	Muskan	80	65	85	95	50	90	Tanvi	70	75	65	85	40	60	Tarun	65	35	50	77	80	80	B	
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Tarun	65	35	50	77	80	80																																																																	
77	If $x + y = 25$ and $xy = 20$, then find the value of $x^3 + y^3$. A. 13152 B. 13125 C. 14125 D. 14152	C																																																																					

78	The bar graph given below shows the percentage distribution of the total expenditures of a company under various expense heads during 2003. Percentage Distribution of Total Expenditure of a Company  The total amount of expenditures of the company is how many times of expenditure on research and development? A. 27 B. 20 C. 18 D. 8	B	
79	A wire is looped in the form of a circle of radius 28 cm. It is rebent into a square form. Determine the length of the side of the square. A. 42 cm B. 44 cm C. 46 cm D. 48 cm	B	
80	What is the unit digit in the product $(3^{65} \times 6^{59} \times 7^{71})$? A. 1 B. 2 C. 4 D. 6	C	
81	Soda-lime glass is also commonly known as: A. Commercial or soft glass B. Hard glass C. Quartz glass D. Bulletproof glass	A	
82	Hollow concrete blocks are primarily utilized in wall construction to offer: A. Higher structural dead weight B. Thermal insulation and reduced self-weight of the structure C. High water absorption D. Complete optical transparency	B	
83	Particle board is manufactured by compressing under heat and pressure: A. Solid timber planks B. Small wood particles, chips, and synthetic resin adhesive C. Paper pulp sheets D. Gypsum board core	B	
84	Manufactured sand (M-sand) used as artificial sand is produced by: A. Dredging river beds B. Crushing hard granite rock in specialized crushers C. Calcining limestone in kilns D. Washing marine sea sand	B	

85	Which type of soil exhibits high plasticity and significant swelling and shrinkage characteristics? A. Coarse Sand B. Fine Gravel C. Clay D. Silt	C	
86	The minimum compressive strength of a first-class brick should not be less than: A. 3.5 N/mm ² B. 7.0 N/mm ² C. 10.5 N/mm ² D. 15.0 N/mm ²	C	
87	<u>Mangalore</u> tiles are classified under which category of clay products? A. Concrete flooring tiles B. Roofing tiles C. Glazed wall tiles D. Pavement tiles	B	
88	The process of reducing moisture content from freshly felled timber to a suitable level is called: A. Dressing B. Seasoning C. Preserving D. Curing	B	
89	Granite is chemically classified as a/an: A. Silicious rock B. Argillaceous rock C. Calcareous rock D. Metamorphic rock	A	
90	Coarse aggregate for concrete is defined as aggregate retained on an IS sieve of size: A. 75 microns B. 2.36 mm C. 4.75 mm D. 10.0 mm	C	
91	Which type of glass contains a significant percentage of lead oxide, imparting high refractive index and clarity? A. Borosilicate glass B. Soda-lime glass C. Flint glass (Lead glass) D. Structural glass	C	
92	Which of the following laboratory tests is performed to determine the rate of wear of stones used in road construction? A. Crushing test B. Attrition test C. Impact test D. Hardness test	B	
93	Compared to natural river sand, manufactured sand (M-sand) generally offers the advantage of: A. Higher organic impurity content B. Complete absence of silt and controlled particle gradation C. Lower compressive strength in mortar D. Excessive clay content	B	

94	The quicklime obtained by burning pure limestone is commonly known as: A. Hydraulic lime B. Fat lime C. Poor lime D. Hydrated lime	B	
95	Bitumen is completely soluble in: A. Pure water B. Carbon disulphide C. Hydrochloric acid D. Nitric acid	B	
96	In the hand feeling field test for cement, when a hand is inserted deep into a fresh bag of cement, it should feel: A. Hot B. Cool C. Warm D. Rough	B	
97	Plywood is manufactured by bonding thin layers of wood (veneers) such that the grain direction of adjacent plies is positioned: A. Parallel to each other B. At right angles (90 degrees) to each other C. At 45 degrees to each other D. In a random orientation	B	
98	According to the Indian Standard particle size classification, silt particles have a size range between: A. 0.002 mm to 0.075 mm B. 0.075 mm to 4.75 mm C. Less than 0.002 mm D. 4.75 mm to 80 mm	A	
99	The frog of a brick is defined as a: A. Depression provided on the top face of the brick B. Crack appearing on the brick surface C. Beveled corner cut from the brick D. Smooth surface on the bottom face of the brick	A	
100	The innermost central core of a woody stem of a tree is known as: A. Heartwood B. Pith C. Cambium layer D. Sapwood	B	