Msc in Computational sc

Set No. 1

Question Booklet No. 00229

471

15P/301/28

(To be filled up by the candidate by blue/black ball-point pen)

Roll No. | | | | | | | | | |

Roll No. (Write the digits in words) .....

Serial No. of OMR Answer Sheet .....

Day and Date .....

.....

(Signature of Invigilator)

INSTRUCTIONS TO CANDIDATES

(Use only ***blue/black ball-point pen*** in the space above and on both sides of the **Answer Sheet**)

1. Within 10 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing. In case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall ***except the Admit Card without its envelope.***
3. ***A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.***
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. ***On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.***
6. ***No overwriting is allowed in the entries of Roll No., Question Booklet no. and Set no. (if any) on OMR sheet and Roll No. and OMR sheet no. on the Question Booklet.***
7. ***Any change in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfairmeans.***
8. ***Each question in this Booklet is followed by four alternative answers. For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet.***
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).*
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit only **OMR *Answer Sheet*** at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

Total No. of Printed Pages : 32

[उपर्युक्त निर्देश हिन्दी में अन्तिम आवरण पृष्ठ पर दिये गए हैं।]

ROUGH WORK
रफ़ कार्य

15P/301/28

No. of Questions : 150

प्रश्नों की संख्या : 150

Time : $2\frac{1}{2}$ Hours ***Full Marks : 450***

समय : $2\frac{1}{2}$ घण्टे ***पूर्णांक : 450***

Note : (1) Attempt as many questions as you can. Each question carries **3 (Three)** marks. ***One mark will be deducted for each incorrect answer.*** **Zero** mark will be awarded for each unattempted question.

अधिकाधिक प्रश्नों को हल करने का प्रयत्न करें। प्रत्येक प्रश्न **3 (तीन)** अंकों का है। *प्रत्येक गलत उत्तर के लिए एक अंक काटा जायेगा।* प्रत्येक अनुत्तरित प्रश्न का प्राप्तांक *शून्य* होगा।

(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

यदि एकाधिक वैकल्पिक उत्तर सही उत्तर के निकट प्रतीत हों, तो निकटतम सही उत्तर दें।

1. If a = 5, b= 10, and c = -6 the value of expression (a<b) || (a < c) :

(1) True (2) False

(3) True and False both (4) None of the above

2. Consider the following segment of C program :

```
int x, y;
x =10;
Y=7;
while (x%y > 0)
  {
```

```
    x = x + 1;
    y = y + 2;
  }
```

Number of times the body of while loop is executed :
(1) 2 (2) 5 (3) 4 (4) 6

3. Consider the following segment of C program

```
int a, b, c, d, f, g;
float e;
a = 15;
b =10;
c = a++ -b;
d = ++b +a;
b--;
e = float(a)/b;
f = a%b;
a *=b;
```

Values of a, b, c, d, e and f after execution of above segments are :
(1) a= 176, b = 10, c = 5, d = 27, e = 1.600, f= 6
(2) a= 170, b = 10, c = 5, d = 26, e = 1, f = 5
(3) a= 176, b = 11, c = 5, d = 26, e = 1, f = 5
(4) a = 160, b = 10, c = 5, d = 27, e = 1.600, f = 6

4. ANSI stand for :
(1) American National Standard Institute
(2) American National Standard Interface
(3) American National Sea Institute
(4) (1) and (2) both

5. Consider the following name :

(i) Minimum	(ii) First.name	(iii) n1 !n2	(iv) name &
(v) double	(vi) 3rd_ row	(vii) doubles	(viii) Row 1
(ix) float	(x) float_s		

The valid variable names are :
(1) i, iii, vii, viii, x
(2) iii, iv, vi
(3) i, v, vii, viii
(4) i, iii, iv, vi

6. Consider the following segment of C program :

```
m=1;
do
{
m= m+2;
if (m%2 !=0)
  break;
else
  printf("%d", m)
} while (m<10);
```

The number of times the body of do – while loop is executed :

(1) 0 (2) 1 (3) 6 (4) 7

7. Consider the following C segment :

```
main()
{
int i;
for (i = -1; i<=10; i++)
{
if (i<5)
printf("%d", i);
continue;
else
break;
printf("%d", i);
  }
}
```

The output of above program :

(1) -1, 0, 2, 3, 4, 5, 6, 7, 8, 9, 10 (2) -1, 0, 1, 2, 3, 4
(3) 5, 6, 7, 8, 9, 10 (4) No output

8. C language has been developed by :

(1) Dennis Ritchie (2) Ken Thompson
(3) Peter Norton (4) Martin Richards

9. C program are converted into machine language with the help of :

(1) A interpreter (2) A compiler
(3) An Operating System (4) Arithmetic Logic Unit

10. Consider the following C program :

```
main()
{
int num1, num2, num3;
scanf ("%2d %5d", &num1, &num2);
scanf ("%2d", &num3);
printf("%d%d%d", num1, num2, num3);
}
```

If the data input to the program 31426, 50, and 100 then the output will be :

(1) 31426, 50, 100 (2) 50, 31426,100

(3) 314, 2650, 100 (4) 31, 426, 50

11. Consider the following C program :

```
main()
{
    int p, q, r;
    scanf ("%3d%4d%3d", &p, &q,&r);
    printf("%d%d%d", p, q, r);
}
```

If the data input to the program 123456789, then the output will be :

(1) 123, 456, 789 (2) 123, 45, 678

(3) 123, 4567, 89 (4) 12, 3456, 789

12. Consider the following C program :

```
main()
{
    char address[80] ;
    scanf ("%[a-z]", address);
    printf("%-80s\n\n", address);
}
```

If input to the program is new delhi 110 002, then the output will be :

(1) new delhi (2) NEW DELHI

(3) New Delhi (4) new delhi 110 002

13. Consider the following C program :

```
main( )
{
  float y;
  y = 98.7654;
  printf("%-7.2f", y);
}
```

Output of the program will be :

(1) 98.76 (2) 0098.76 (3) 98.77 (4) 0098.77

14. Which of the following is true :

(1) Array is used to group same type data

(2) Array is used to group different type data

(3) Array is used linear data structure

(4) (1) and (2) both

15. Consider the following declaration of array in C language :
int A[20];

The first and last element of the array is :

(1) A[1], A[20] (2) A[1], A[19] (3) A[0], A[20] (4) A[0], A[19]

16. Consider the segment of the following C program

```
main()
{
  static int b[] = {10, 20, 30, 40, 50};
  int i;
  for (i=0; i <=4; i++)
  printf("%d", i[b]);
}
```

The output of the above program will be :

(1) 10, 20, 30, 40, 50 (2) 10, 20, 30, 40

(3) Address of each element (4) Error

17. Consider the segment of the C program :

```
int n[25], x, y;
n[0] = 100;
n[24] = 200;
x= *n;
y = *(n+24) + *(n+0);
```

The value of x and y is :

(1) x = 100, y = 200 (2) x = 100, y = 300

(3) x = 300, y = 100 (4) x = 200 ,y = 100

18. The standard C function *strcmp 0* returns the value

(1) 0 if both arguments are same

(2) -1 if both arguments are not same

(3) Numeric difference between the first nonmatching characters in the argument

(4) (1) and (3) both

19. a *= n+1 is equivalent to :

(1) a = a+n+1 (2) a = a*(n +1)

(3) a= a*n+1 (4) a = a*(a+n+1)

20. Expression x=a-b/3 +c*2-1 is equivalent to :

(1) x = a – (b/3) + (c*2) -1 (2) x = (a – b)/3 + (c*2) -1

(3) x = (a – b) / (3 +c) *2 -1 (4) x = (a – b) / (3 +c) *(2 -1)

21. Union is data structure in C is used to group____

(1) binary data types (2) same type data

(3) different types of data (4) (2) and (3)

22. In structure____ :

(1) each member has common memory location

(2) each member has its own memory location

(3) same data type member share common memory space

(4) same data type member has its own memory

23. Consider the following ANSI C structure

```
struct item
{
   int m;
   float    x;
   char     c[2];
};
```

Total memory location required to store any structure variable of type item is :

(1) 2 byte (2) 4 byte (3) 6 byte (4) 8 byte

24. The requirement is that the program should receive a key from the keyboard. However, the key that is hit should not appear on the screen. Which of the following function would you use ?

(1) getch() (2) getche() (3) getchar() (4) fgetchar()

25. Which of the following functions is most appropriate for storing numbers in file ?

(1) putc() (2) fprintf() (3) fwrite() (4) frewind ()

26. 2's complement of binary number 0101 :

(1) 1010 (2) 0110 (3) 1100 (4) 1011

27. Subtraction of binary number 10011 – 11100 is :

(1) + 00100 (2) +01001 (3) -01001 (4) +10111

28. Binary equivalent of decimal number $(23)_{10}$:

(1) 10111 (2) 01111 (3) 10011 (4) 11011

29. Decimal equivalent of binary number $(11.01)_2$:

(1) 3.15 (2) 3.025 (3) 3.25 (4) 3.05

30. Octal equivalent of the binary number $(100111)_2$:

(1) 48 (2) 45 (3) 57 (4) 47

31. Hexadecimal equivalent of binary number $(11011001)_2$:

(1) D9 (2) A9 (3) D7 (4) C9

32. Decimal equivalent of the hexadecimal number $(FFFF)_{16}$:
(1) 6536 (2) 65536 (3) 65365 (4) 65556

33. The decimal number -39 is expressed in 2's complement form as :
(1) 00100111 (2) 11011000 (3) 11011001 (4) 11010001

34. Determine the decimal values of the binary number $(10101010)_2$ in 2's complement :
(1) +86 (2) -86 (3) +98 (4) -98

35. The number of bits in nibble are :
(1) 2 (2) 4 (3) 8 (4) 12

36. BCD Equivalent of decimal number $(646)_{10}$:
(1) 011000100110 (2) 011001100100
(3) 011001000110 (4) None of these

37. Odd parity can be detected by :
(1) XOR (2) XNOR (3) OR (4) AND

38. Boolean algebra is used to :
(1) Simplify to any algebraic equations
(2) Minimize the no. of circuit switches
(3) Perform the arithmetic calculations
(4) All of the above

39. The following gate is called universal gate :
(1) NAND (2) AND (3) XOR (4) OR

40. Using ASCII code, number of characters we can represent are :
(1) 256 (2) 128 (3) 64 (4) 32

41. $(3A - 2F)_{16} = (\ )_{10}$:
(1) 58.1386 (2) 58.1876 (3) 58.1845 (4) 58.1836

42. Each individual term in standard sum of product (SOP) and in standard product of sum (POS) is called :
(1) minterm and maxterm (2) maxterm and minterm
(3) minterm and minterm (4) maxterm and maxterm

43. Standard sum of product (SOP) form of y = AB' + A'C + BC is :

(1) $\sum(0,1,2,3,5)$ (2) $\sum(0,2,4,5,7)$

(3) $\sum(1,3,4,5,7)$ (4) $\sum(1,3,5,6,7)$

44. The minimal expression obtained using K-map technique :
(1) must be necessarily unique (2) may not be necessarily unique
(3) can be redundant (4) None of these

45. Which of the following gate is universal gate ?
(1) NOT (2) OR (3) AND (4) NOT-AND

46. The Boolean expression (AB' + AC')(BC+BC')(ABC) =
(1) ABC . (2) AB' + AC' (3) 0 (4) 1

47. The total number of Boolean functions which can be generated with four variables is :
(1) 16 (2) 256 (3) 4 (4) 64

48. The operation of logical gate which is commutative but not associative is :
(1) NOR (2) OR (3) AND (4) EX-OR

49. In which flip flop the output is equal to the input :
(1) S-R flip flop (2) J-K flip flop (3) D- flip flop (4) T- flip flop

50. In D- flip flop the output occurs :
(1) At beginning of the clock pulse
(2) At peak of clock pulse
(3) At end of clock pulse
(4) At the absence of clock pulse

51. A system of homogeneous, linear equation $AX = 0$ has only trivial solution if :
(1) A is symmetric (2) A is singular matrix
(3) A is not singular matrix (4) A is not of full rank

52. The locus of intersection of two mutually perpendicular tangents to an ellipse is a :
(1) circle (2) parabola (3) straight line (4) ellipse

53. If [x] denotes greatest integer function, then the value of [e — 5] is :
(1) -2 (2) -3 (3) -5 (4) 2

54. The function $f: R \to R$ defined by $f(x) = x + |x|$ is :
(1) Continuous everywhere but not differentiable at $x = 0$
(2) Differentiable everywhere but not continuous at $x = 0$
(3) Continuous and differentiable everywhere
(4) Neither continuous nor differentiable

55. The locus of complex number, z, satisfying $|z-2| + |z+2| = 4$ is :
(1) Line segment (2) Circle
(3) Ellipse (4) Straight Line

56. The domain of real valued function $f(x) = \sqrt{5x - x^2 - 6}$ is :
(1) R (2) $(0, \infty)$ (3) (2,3) (4) [2,3]

57. The function $f(x) = \sin(2x)$ is increasing in :
(1) $\left(0, \frac{\pi}{2}\right)$ (2) $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$ (3) $\left(0, \frac{\pi}{4}\right)$ (4) $\left(-\frac{\pi}{4}, \frac{\pi}{4}\right)$

58. If $f(x) = \sin(2x)$, $0 \leq x \leq \pi$, the value x at which f has a minimum is :
(1) $\frac{\pi}{4}$ (2) $\frac{\pi}{2}$ (3) $\frac{3\pi}{4}$ (4) π

59. The polar equation $\frac{2}{r} = a \cos q$, for fixed a, represents :
(1) Straight line (2) Circle (3) Parabola (4) Point

60. The infinite series $\frac{1}{\sqrt{1}}+\frac{1}{\sqrt{2}}+\frac{1}{\sqrt{3}}+\frac{1}{\sqrt{4}}+\ldots\ldots$ is :

(1) Convergent (2) Divergent

(3) Oscillates finitely (4) Oscillates infinitely

61. The value of the integral $\int_0^{\frac{\pi}{2}} \frac{\tan^{2015} x}{1+\tan^{2015} x}\, dx$ is equal to :

(1) 0 (2) $\frac{\pi}{4}$ (3) 1 (4) $\frac{\pi}{2}$

62. The value of $\int_0^{\infty} e^{-t} t^{2015}$ dt is :

(1) $\Gamma(2013)$ (2) $\Gamma(2014)$ (3) $\Gamma(2015)$ (4) $\Gamma(2016)$

63. If u = 2xy is real part of an analytic function, then the function f (z) is :

(1) iz^2 (2) z^2 (3) $-z^2$ (4) $-iz^2$

64. The distance between the planes $2x + 3y - z = 0$ and $4x + 4y - 2z + 5 = 0$ is :

(1) 1/2 (2) 1/4 (3) 1/6 (4) 1/3

65. The image of the point (1,3,4) in the plane $2x - y + z + 3 = 0$ is :

(1) (3,5,2) (2) (-3,5,2) (3) (3,5,-2) (4) (3,-5,2)

66. The equation of the plane parallel to the lines $x - 1 = 2y - 5 = 2z$ and $3x = 4y - 11 = 3z - 4$ and passing through the point (2,3,3) is :

(1) $x + 4y + 2z + 4 = 0$ (2) $x - 4y + 2z + 4 = 0$

(3) $x - 4y + 2z - 4 = 0$ (4) $x + 4y + 2z - 4 = 0$

67. The series $\sum \frac{(-1)^n}{n} |x|^n$ is uniformly convergent if :

(1) $-1 < x < 1$ (2) $-1 \leq x \leq 1$

(3) $x < -1$ & $x > 1$ (4) $x \leq -1$ & $x \geq 1$

68. The infimum and supremum of the set $\left(-2,-\frac{3}{2},-\frac{4}{3},-\frac{5}{4},.....\right)$ are :

(1) 0 & 1 (2) -2 & 0 (3) -2 & -1 (4) -2 & 1

69. If $a_n = \sin\frac{n\pi}{2}+\frac{(-1)^n}{n}, n\in N$, then limit superior of sequence a_n is :

(1) $\overline{\lim} a_n = -1$ (2) $\overline{\lim} a_n = 0$ (3) $\overline{\lim} a_n = 1$ (4) $\overline{\lim} a_n = \infty$

70. If a sequence $a_n = \left\{(-1)^n(1+\frac{1}{n})\right\}$, then sequence a_n is :

(1) Convergent (2) Divergent
(3) Oscillates finitely (4) Oscillates infinitely,

71. The series $\frac{\log 2}{2^2}-\frac{\log 3}{3^2}+\frac{\log 4}{4^2}-\frac{\log 5}{5^2}+.....$ is :

(1) Convergent (2) Divergent
(3) Oscillates finitely (4) Oscillates infinitely

72. The value of $\lim_{x\to 0}\left(\frac{x-\tan x}{x^3}\right)$ is :

(1) 1/3 (2) -1/3 (3) 0 (4) 1

73. If the function f defined as $f(x) = \frac{1}{2^n}$ when $\frac{1}{2^{n+1}} < x \le \frac{1}{2^n}$, (n = 0,1,2, ...);
$f(0) = 0$, then $\int_0^1 f\,dx$ is :

(1) 1/3 (2) 2/3 (3) 1 (4) 1/2

74. If the function f defined as $f(x) = \frac{1}{\sqrt{1-x}}$ then $\int_0^1 f\,dx$ is :

(1) 0 (2) 1 (3) 2 (4) 1/2

75. If the function f defined as $f(x) = \frac{\log x}{\sqrt{x}}$ then $\int_0^1 f\,dx$ is :

(1) Convergent (2) Divergent

(3) Oscillates finitely (4) Oscillates infinitely

76. For what value of m, the integral $\int_0^1 \log\left(\frac{1}{x}\right)^m$ is convergent :

(1) $m > 0$ & $m \leq -1$ (2) $m \geq 0$ & $m \leq -1$

(3) $0 > m > -1$ (4) $0 \geq m \geq -1$

77. If A and B be n × n matrices with the some minimal polynomial then :

(1) A is similar to B

(2) A is diagonalizable if B is diagonalizable

(3) A-B is similar

(4) A and B are commutative

78. If the eigen value of 3 × 3 real matrix P are 1, -2, 3 then :

(1) $P^{-1} = \frac{1}{6}(5I - 2P + P^2)$ (2) $P^{-1} = \frac{1}{6}(5I - 2P - P^2)$

(3) $P^{-1} = \frac{1}{6}(5I + 2P + P^2)$ (4) $P^{-1} = \frac{1}{6}(5I + 2P - P^2)$

79. Let the characteristic equation of a matrix M be $\lambda^2 - \lambda - 1 = 0$ then :

(1) M^{-1} does not exist

(2) M^{-1} exist but cannot be determined

(3) $M^{-1} = M + 1$

(4) $M^{-1} = M - 1$

80. The four vectors (1,1,0,0), (1,0,0,1), (1,0,a,0), (0,1,3,b) are linearly independent if (a,b) is :

(1) $a \neq 0, b \neq 2$ (2) $a \neq 2, b \neq 0$

(3) $a \neq 0, b \neq -2$ (4) $a \neq -2, b \neq 0$

81. If T be the linear operator of R^2 defined by $T(x, y) = (4x - 2y, 2x + y)$ then matrix of T in the basis $\{f_1 = (1, 1), f_2 = (-1,0)\}$ is :

(1) $[T]_f = \begin{bmatrix} 3 & 2 \\ 1 & 2 \end{bmatrix}$ (2) $[T]_f = \begin{bmatrix} 3 & -2 \\ 1 & -2 \end{bmatrix}$ (3) $[T]_f = \begin{bmatrix} 3 & -2 \\ 1 & 2 \end{bmatrix}$ (4) $[T]_f = \begin{bmatrix} 3 & 1 \\ -2 & 2 \end{bmatrix}$

82. General solution of differential equation $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$ is of the form :

(1) $u = f(x + iy) + g(x - iy)$ (2) $u = f(x - iy) + g(x + iy)$

(3) $u = f(x + iy) - g(x - iy)$ (4) $u = f(x - iy) - g(x - iy)$

83. Which of the following is not an integrating factor of $xdy - ydx = 0$:

(1) $\frac{1}{x^2}$ (2) $\frac{1}{x^2 + y^2}$ (3) $\frac{1}{xy}$ (4) $\frac{x}{y}$

84. General solution of differential equation $\frac{d^2y}{dx^2} + 4y = \sec^2 2x$ is :

(1) $y = c_1 \cos 2x + c_2 \sin 2x - \frac{1}{4} + \frac{1}{4} \sin 2x \log(\sec 2x + \tan 2x)$

(2) $y = c_1 \cos 2x - c_2 \sin 2x + \frac{1}{4} \sin 2x \log(\sec 2x + \tan 2x)$

(3) $y = (c_1 + c_2 x) e^{2x} + \frac{1}{4} \log(\sec 2x + \tan 2x)$

(4) $y = c_1 \cos 2x + c_2 \sin 2x + \frac{1}{4} - \frac{1}{4} \sin 2x$

85. Integrating factor of $(x^7y^2 + 3y)dx + (3x^8y - x)dy = 0$ is $x^m y^n$, then :

(1) $m = -7$ & $n = 2$ (2) $m = -1$ & $n = 7$

(3) $m = -7$ &$n = 1$ (4) $m = -7$ & $n = -2$

86. Partial differential equation of second order in canonical forms $Rr + Ss + Tt + f(x, y, z, p, q) = 0$ then $S^2 - 4RT > 0$ represent :

(1) Parabolic (2) Elliptic (3) Straight line (4) Hyperbolic

87. The curve satisfying $\frac{dy}{dx}=\frac{y^2-2xy-x^2}{y^2+2x-x^2}$ and passing through (1,-1) is given by :

(1) A straight line (2) A circle (3) An ellipse (4) A parabola

88. The solution of $p^2 - px = q$ is given by :

(1) $z = axe^{-y}$ (2) $z = aye^{-x}$

(3) $z = axe^{-y} - \frac{1}{2}a^2e^{-2x} + b$ (4) $z = aye^{-x} + \frac{1}{2}a^2e^{-2x} + b$

89. The principal value of $(i)^{-2i}$ is :

(1) $e^{-\pi}$ (2) e^{π} (3) $e^{-\pi/2}$ (4) $e^{-2\pi}$

90. Find the complex number z such that $z^2 + |z| = 0$:

(1) $z = 0, \pm i$ (2) $z = \pm i$ (3) $z = 0, i$ (4) $z = 0, -i$

91. $|z+i| - |z - i| = k$ represent a hyperbola if :

(1) $-2 < k < 2$ (2) $K > 2$ (3) $0 < k < 2$ (4) $2 < k < 4$

92. For what value of α the vector $\alpha(x+y)\hat{i} + 4y\hat{j} + 3\hat{k}$ is solenoidal :

(1) 0 (2) 4 (3) –2 (4) –4

93. For what value of a, b & c the vector $(x + 2y + az)\,\hat{i} + (bx - 3y - z)\,\hat{j} + (4x + cy + 2z)\,\hat{k}$ is irrotational :

(1) $a = -4, b = 2, c = -1$ (2) $a = 4, b = 2, c = -1$

(3) $a = 4, b = -2, c = -1$ (4) $a = -4, b = -2, c = 1$

94. The directional derivative of $\frac{1}{r}$ (where $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$) in the direction of $\vec{r}$ is :

(1) $\frac{1}{(x^2+y^2+z^2)^{1/2}}$ (2) $-\frac{1}{(x^2+y^2+z^2)^{1/2}}$

(3) $\frac{1}{(x^2+y^2+z^2)}$ (4) $-\frac{1}{(x^2+y^2+z^2)}$

95. The Laplace transform of $f(t) = 5e^{-7t} + t + 2e^{2t}$ is :

(1) $\frac{5}{s+7}+\frac{1}{s^2}+\frac{2}{s-2};s>-7$ (2) $\frac{4}{s+7}+\frac{1}{s^2}+\frac{2}{s-2};s>0$

(3) $\frac{5}{s+7}+\frac{1}{s^2}+\frac{2}{s-2};s>-5$ (4) $\frac{5}{s+7}+\frac{1}{s^2}+\frac{2}{s-2};s>2$

96. The inverse Laplace transform of $\left(\frac{2s-3}{s^2-3s+2}\right)$ is :

(1) $e^{-t} + e^{2t}$; $t > 0$ (2) $e^{-t} + e^{-2t}$; $t \geq 0$

(3) $e^{t} + e^{2t}$; $t \geq 0$ (4) $e^{t} + e^{-2t}$; $t > 0$

97. If $x + y + z = u$, $y + z = uv$ and $z = uvw$ then Jacobian of (x, y, z) with respect to (u, v, w) is :

(1) u^2v (2) u^3v^2w (3) uvw (4) uv

98. The value of $\left[\vec{a}\times\vec{b}\ \ \vec{b}\times\vec{c}\ \ \vec{c}\times\vec{a}\right]$ is :

(1) $2\left[\vec{a}\ \vec{b}\ \vec{c}\right]$ (2) $3\left[\vec{a}\ \vec{b}\ \vec{c}\right]$ (3) $\left[\vec{a}\ \vec{b}\ \vec{c}\right]^2$ (4) 0

99. If the dimensions of subspaces W_1 and W_2 of a vector space V are 3 and 4 respectively and $\dim(W_1 \cap W_2)=1$, then $\dim(W_1 + W_2)$ is :

(1) 5 (2) 6 (3) 7 (4) 12

100. Which one is a linear transformation :

(1) $T(x_1, x_2) = (1 + x_1, x_2)$ (2) $T(x_1, x_2) = (x_1^2, x_2)$

(3) $T(x_1, x_2) = (\sin x_1, x_2)$ (4) $T(x_1, x_2) = (x_2, x_1)$

101. There are (n+1) observations in a series. If $\bar{x}_1$ is the mean of first n observations and $\bar{x}_2$ is the mean of last n observations, then :

(1) $\bar{x}_2 = \bar{x}_1 + x_{n+1} - x_1$. (2) $\bar{x}_2 = \bar{x}_1 - x_{n+1} - x_1$.

(3) $\bar{x}_2 = \bar{x}_1 + (x_{n+1} - x_1)/n$. (4) $\bar{x}_2 = \bar{x}_1 - (x_{n+1} - x_1)/n$.

102. Read the following statements carefully in context of the function given below :

$F(x) = 0$, if $x<0$

$= 3c^2$, if $0 \leq x<1$

$= 4c-7c^2$ if $1 \leq x<2$

$= 9c-7c^2 -1$, if $2 \leq x<3$

$= 1$, if $3 \leq x$.

Assertion(A): F(x) can be cumulative distribution function of a continuous positive random variable for properly chosen value of 'c'.

Reason(R) : For proper choice of 'c', F(x) is monotone and bounded between 0 and 1.

Select your answer from the following codes :

(1) Both A and R is true and R is correct explanation of A

(2) Both A and R is true but R is not correct explanation of A

(3) A is true but R is false

(4) A is false but R is true

103. The mean weight of 150 students in a class is 60 Kgs. The mean weight of boys is 70 Kgs. And that of girls is 55 Kgs. The number of boys and girls in the class are respectively :

(1) 50, 100 (2) 75, 75 (3) 80, 70 (4) 100, 50

104. A statistical table will have four essential components, namely title, stub, caption and body. Read the following in this context carefully :

S1: Caption is the upper row containing the titles of the columns.

S2: Stub is the left column containing the titles of the rows and its heading.

S3: A source note is given below the table if the figures in the table present primary data.

Choose the correct statement from the following :

(1) Only S3 is correct

(2) Only S1 and S2 are correct

(3) All are correct

(4) All are incorrect

105. Which of the following pairs of nas. is different from others in same way :

(1) 13–32 (2) 24–31 (3) 21–14 (4) 35–43

106. $x_1, x_2, \ldots, x_n$ are the increasing values of the characteristic under study with corresponding frequencies $f_1, f_2, \ldots f_n$. Assume that x_0 ($< x_1$) and x_{n+1} ($> x_n$) are hypothetical values of it each with frequency zero. The consecutive points, with abscissa as the values and ordinate as the corresponding frequencies, are joined by the straight line to give a frequency polygon. The total area within the polygon would be proportional to :

(1) $\sum_{i=1}^{n} f_i (x_{i+1} - x_i)$ (2) $\sum_{i=1}^{n} f_i (x_{i+1} - x_{i-1})$

(3) $\sum_{i=1}^{n} x_i (f_{i+1} - f_i)$ (4) $\sum_{i=1}^{n} x_i (f_{i+1} f_{i-1})$

107. There are 5 officers provided 20 servants in all. The geometric mean of the salaries of the officers is Rs. 10, 00, 00,000/- per month and the combined geometric mean of the officers and servants is Rs. 10,000/- per month. In this context read the following carefully :

Statement(S): The exact value of the geometric mean of the salaries of the servants cannot be calculated.

Reason(R): The information provided is insufficient.

Choose your answer from the following :

(1) S is true and R is its correct explanation

(2) S is true but R is not its correct explanation

(3) S is false but R is true

(4) Both S and R are false

108. Which of the following measures of central tendency could be computed on a variable that is measured on a nominal scale of measurement ?

(1) mean

(2) median

(3) mode

(4) all of the above

109. Out of mean, median and mode which can be located graphically ?

(1) Only mean and median (2) Only median and mode

(3) Only mode and mean (4) All the three

110. Which of the following measures of central tendency can have more than one value in a single sample ?

(1) mean (2) median

(3) mode (4) none of the above

111. The mean and variance of 10 observations are 36 and 64 respectively. Each observation is first multiplied by 2 and then 5 are added. The mean and variance of the observations thus obtained would be respectively :

(1) 77 and 133 (2) 77 and 256 (3) 72 and 128 (4) 41 and 64

112. For a negatively skewed distribution, the correct inequality between mean, median and mode should be :

(1) Mean < Median< Mode (2) Mean<Mode< Median

(3) Mode< Median<Mean (4) Mode < Mean < Median

113. For a given distribution, a student calculated the Pearson's coefficient of skewness(β_1) and kurtosis(β_2) as 1.87 and 2.46 respectively. Choose the most appropriate comment from the following codes :

(1) The above mentioned values are not possible for any distribution.

(2) The above mentioned values are possible for platykurtic and positively skewed distribution only.

(3) The above mentioned values are possible for leptokurtic and negatively skewed distribution only.

(4) The above mentioned values are possible for platykurtic and skewed distribution but positively or negatively skewed, cannot be inferred.

114. $\bar{X}w$ is the weighted mean of X_i's with weights W_i's , i = 1, 2, ..., n ; then $\sum_{i=1}^{n}\sum_{j=1}^{n} W_i W_j (X_i - X_j)^2$ can also be written as

(1) $2\left(\sum_{j=1}^{n} W_i\right)\{\sum_{i=1}^{n} W_i (X_i - \bar{X}w)^2\}$ (2) $2\{\sum_{j=1}^{n} W_i (X_i - \bar{X}w)\}^2$

(3) $\left(\sum_{j=1}^{n} W_i\right)\{\sum_{i=1}^{n} W_i (X_i - \bar{X}w)^2\}$ (4) $\{\sum_{i=1}^{n} W_i (X_i - \bar{X}w)\}^2$

115. Given the data set[2 4 3 6 1 8 9 2 5 7], the value of the median is :

(1) Any value x such that $4 \leq x < 5$ but conventionally we take it as 4.5

(2) Any value x such that $4 < x \leq 5$ but conventionally we take it as 4.5

(3) Any value x such that $4 < x < 5$ but conventionally we take it as 4.5

(4) Any value x such that $4 \leq x \leq 5$ but conventionally we take it as 4.5

116. Which of the following statements are always correct ?

A: Logarithm of the geometric mean is arithmetic mean of the logarithm of the values.

B: Reciprocal of the harmonic mean is arithmetic mean of the reciprocal of the values.

C: Geometric mean is equal to the geometric mean of arithmetic and harmonic means of the values.

Choose the answer from the following codes :

(1) Only A and B (2) Only A and C

(3) Only B and C (4) A, B and C, all

117. X and Y are two independent random variables. Then :

(1) $E(X^2Y^2) < [E(X)]^2[E(Y)]^2$ (2) $E(X^2Y^2) > [E(X)]^2[E(Y)]^2$

(3) $E(X^2Y^2) = [E(X)]^2[E(Y)]^2$ (4) $E(X+Y)^2 < [E(X)+E(Y)]^2$

118. Match the items in list A with those in list B :

List A		**List B**
I : Karl Pearson's coefficient of skewness (formula)	A	: ± 3
II : Bowley's coefficient of skewness (formula)	B	: ±1
III : Limit of Karl Pearson's coefficient of skewness	C	: $(Q_3+Q_1-2Q_2)/(Q_3-Q_1)$ Q_i denotes ith quartile
IV : Limit of Bowley's coefficient of skewness	D :	$\frac{3\ (\text{mean-median})}{\text{standard deviation}}$

Choose the answer from the following codes :

	I	**II**	**III**	**IV**
(1)	C	D	A	B
(2)	D	C	A	B
(3)	D	C	B	A
(4)	C	D	B	A

119. Consider the equations of lines 3X+4Y=45 and 3X+Y=27. Choose your comment from the following codes in context of these lines representing the pair of regression lines :

(1) These can never represent a pair of regression lines

(2) The regression coefficient of Y on X is -3

(3) The correlation coefficient between X and Y is ½

(4) The regression coefficient of Y on X is -3/4

120. From the following choose the comment which is ALWAYS TRUE in context of pair of regression lines :

(1) If one of the regression coefficients is less than one the other should be more than one.

(2) If one of the regression coefficients is more than one, the other should be less than one.

(3) Both the regression coefficients can never be less than one.

(4) Both the regression coefficients can be more than one.

121. The maximum value of the sum of square of the differences between the ranks awarded by two examiners to a group of 11 students will be :

(1) 220 (2) 440 (3) 506 (4) 1020

122. Let r_{xy}, and η_{xy} denote the correlation coefficient between X and Y and correlation ratio of X on Y respectively. Which of the following is generally **NOT TRUE** ?

(1) $r_{xy} = r_{xy}$ (2) η_{xy} η_{yx} (3) $r_{xy}^2 \leq 1$ (4) $\eta_{xy}^2 \leq 1$.

123. Out of 1482 persons in a locality exposed to small- pox, in all 368 were attacked. There were 343 persons in the locality who were vaccinated against small pox but 35 among them were attacked. From this data, the conclusion about association between vaccination and attack would be that :

(1) These are positively associated

(2) These are not associated

(3) These are negatively associated

(4) The data is insufficient to draw any conclusion

124. In context of the dichotomous classification of data according to n attributes, read the following statements :

S_1: The number of positive class frequencies is same as that of ultimate class frequencies.

S_2: Data is completely specified if ultimate class frequencies are given.

S_3: Data is completely specified if any 2^n class frequencies are given.

Choose the correct answer from the following codes :

(1) S_1 and S_2 are true but S_3 is false

(2) S_2 and S_3 are true but S_1 is false

(3) S_1 and S_3 are true but S_2 is false

(4) S_1 and S_2 and S_3 all are true

125. The equation of pair of regression lines for a given data is reported as $4X + 5Y+33 = 0$ and $20X - 9Y - 107 = 0$.

Statement(S): We cannot calculate the correlation coefficient between X and Y.

Reason(R): The equation of regression line of X on Y and that of Y on X are not specified.

Choose your answer from the following codes :

(1) S is true and R is its correct explanation

(2) S is true but R is not its correct explanation

(3) S is false but R is true

(4) Both S and R are false

126. $X_1, X_2, \ldots X_{10}$, are independently and identically distributed random variables, each having mean 10 and variance 64. If $T= X_1+ X_2+ \ldots +X_9$ and $V= X_1, X_2, \ldots X_{10}$, the correlation coefficient between T and V will be :

(1) 0.9 (2) $+\sqrt{0.9}$ (3) $-\sqrt{0.9}$ (4) None of these

127. In tossing of a coin four times, the events E_1 and E_2 are mutually exclusive if :

(1) E_1: Getting at least two heads and E_2: Getting at most two tails.

(2) E_1: Getting at least two heads and E_2: Getting at least two tails.

(3) E_1: Getting at least three heads and E_2: Getting at most three tails.

(4) E_1: Getting at least three heads and E_2: Getting at least three tails.

128. In a university 60% students are male. 50% of the male students and 30% of the female students are smokers. If a student is seen smoking, the probability that it is a female student is

(1) Equal to 0.3 (2) Less than 0.3

(3) Between 0.3 and 0.4 (4) More than 0.4

129. There are three bags, each containing 12 white and 8 black balls. One ball is drawn from the first bag and placed in the second bag. Then a ball is drawn from the second bag and placed in the third bag. Finally a ball is drawn from the third bag. The probability that the ball drawn is white is :

(1) 12/20 (2) 13/20 (3) 12/21 (4) 13/21

130. In a row of N seats, people are seated randomly. The probability that two specified people are seated next to each other is :

(1) (N-1)/N! (2) 2/N (3) 1/N (4) (N-1)/2(N!).

131. Under the same unit of measurement, three random variables X, Y and Z follow Binomial, Poisson and Negative Binomial distribution respectively but the parameters are unknown. If the ratio of mean and variances of X, Y and Z are A, B and C respectively, then :

(1) $A \leq B \leq C$

(2) $B \leq C \leq A$

(3) $C \leq B \leq A$

(4) A, B and C cannot be compared because the parameters are not specified.

132. A and B are two events such that whenever A happens B happens but not vice-a –versa and P(B)<1. If p= $P(A^c \cup B^c)$,.q = $P(A^c \cap B^c)$ and r = $P(A^c \mid B^c)$ then :

(1) $q \leq r \leq p$

(2) $q \leq p \leq r$

(3) $r \leq q \leq p$

(4) No inequality exists, in general among p, q, r

133. Which of the following is always true ?

(1) If a random variable X may have no moments, its moment generating function will never exist.

(2) If a random variable X has all or some of the moments, even then its moment generating function may not exist except only at one point.

(3) If a random variable X has all or some of the moments and moment generating function exists, it will always generate those moments which exists.

(4) If a random variable X has all the moments, its moment generating function always exists for all real t.

134. A function is defined below :

$F(x) = 0$, for $x \leq 0$;

$= x/2$, for $0 \leq x < 1$;

$= 1/2$, for $1 \leq x \leq 2$;

$= x/4$, for $2 \leq x < 4$;

$= 1$, for $4 \leq x$.

Then F(x) is :

(1) not a c.d.f

(2) c.d.f.of a continuous random variable

(3) c.d.f.of a discrete random variable

(4) c.d.f.of a mixed random variable

135. Two discrete random variables X and Y have $P(X=1 \cap Y=1) = 2/9$, $P(X=1 \cap Y=2) = P(X=2 \cap Y=1) = 1/9$ and $P(X=2 \cap Y=2) = 5/9$. Read the following statements carefully:

S_1: X and Y are independently distributed.

S_2: X and Y are identically distributed.

Choose the correct answer from the following codes:

(1) Both S_1 and S_2 are true. (2) S_1 is true but S_2 is false.

(3) S_1 is false but S_2 is true. (4) Both S_1 and S_2 are false

136. Read the following statements carefully :

S_1: Poisson distribution is limiting case of Binomial distribution.

S_2: Poisson distribution is limiting case of Negative Binomial distribution.

S_3: Geometric distribution is a special case of Negative Binomial distribution.

Choose the correct answer from the following :

(1) S_1 and S_2 are true but S_3 is false

(2) S_2 and S_3 are true but S_1 is false

(3) S_1 and S_3 are true but S_2 is false

(4) S_1 and S_2 and S_3 all are true

137. If X_1, X_2 and X_3 are three independent Poisson variables with parameters λ_1, λ_2 and λ_3 respectively, the conditional distribution of X_1, X_2 and X_3 given that $X_1 + X_2 + X_3 = 100$ is :

(1) Poisson (2) Binomial

(3) Hyper geometric (4) Trinomial

138. If X follows a uniform distribution over (0, 1) then $-2\log X$ will follow

S_1: chi-square distribution with one degree of freedom.

S_2: gamma distribution with parameter 1/2.

Choose the correct answer from the following codes :

(1) Both S_1 and S_2 are true (2) S_1 is true but S_2 is false

(3) S_1 is false but S_2 is true (4) Both S_1 and S_2 are false

139. t-distribution with one degree of freedom is a :

(1) Gamma distribution (2) Beta distribution

(3) Normal distribution (4) Cauchy distribution

140. If $P(X > s + t \mid X>s) = P(X > t)$, and X is non-negative integer valued random variable, then X follows :

(1) Geometric distribution (2) Hyper geometric distribution

(3) Exponential distribution (4) Poisson distribution

141. Match the items in list A with those in list B :

List A (law of large numbers)		**List B (Type of convergences)**
I : Weak Law of Large Numbers	A :	Convergence in Law
II : Strong law of Large Numbers	B :	Convergence in probability
III : Central Limit theorem	C :	Convergence Almost Sure

Choose the answer from the following codes :

	I	II	III
(1)	A	B	C
(2)	A	C	B
(3)	B	A	C
(4)	B	C	A

142. Stratified sampling is recommended for use if :

S_1: Population is homogenous.

S_2: Population is heterogeneous but each stratum is homogeneous within itself.

S_3: Population is heterogeneous and strata are heterogeneous between themselves.

Choose your answer from the following codes :

(1) S_1 and S_2 are true but S_3 is false

(2) S_2 and S_3 are true but S_1 is false

(3) S_1 and S_3 are true but S_2 is false

(4) S_1 and S_2 and S_3 all are true

143. Read the following carefully :

Statement(S): Cluster sampling is in general less efficient than simple random sampling.

Reason(R): The units within the clusters are expected to be more homogeneous.

Choose your answer from the following codes :

(1) S is true and R is its correct explanation

(2) S is true but R is not its correct explanation

(3) S is false but R is true

(4) Both S and R are false

144. X takes values 1, 2, 3 and 4 with probability distribution P_0 under null hypothesis and P_1 under alternative hypothesis as given below :

X	:	**1**	**2**	**3**	**4**
P_0	:	2/13	3/13	3/13	5/13
P_1	:	2/13	3/13	1/13	7/13

Consider the critical regions $W_1 = \{1, 2\}$, $W_2 = \{1, 3\}$ and $W_3 = \{4\}$. Read the following statements carefully :

S_1: All the critical regions have same size 5/13

S_2: W_1 and W_2 have powers more than that of W_3

Choose the correct answer from the following :

(1) Both S_1 and S_2 are true

(2) S_1 is true but S_2 is false

(3) S_1 is false but S_2 is true

(4) Both S_1 and S_2 are false

145. Samples of sizes 10 and 15 are drawn from normal populations $N(\mu_1, 16)$ and $N(\mu_2, 16)$. The most appropriate test for testing $H0: = \mu_1 = \mu_2$ would be :

(1) Normal test (2) t-test

(3) chi-square test (4) F-test

146. The regularity conditions for Cramer-Rao inequality do not hold when we are sampling from :

(1) Normal $(10, \theta^2)$ (2) Binomial $(25, \theta)$

(3) Poisson (θ) (4) Uniform $(0, \theta)$

147. If X is a single observation from a Poisson distribution with parameter θ then $(-4)^x$ is :

(1) unbiased estimator of $e^{-\theta}$ (2) unbiased estimator of $e^{-4\theta}$

(3) unbiased estimator of $e^{-5\theta}$ (4) none of the above three

148. Consider the events A and B such that $P(A) = 1/4$, $P(B \mid A) = 1/2$ and $P(A \mid B) = 1/4$. The random variables X and Y are defined as :

$X(w) = 1$, if $w \in A$

$= 0$, otherwise

and

$Y(w) = 1$, if $w \in B$

$= 0$, otherwise

Which of the following is true ?

(1) $P(X=0 \cap Y=0) = 5/8$ (2) $P(X=0 \cap Y=1) = 1/8$

(3) $P(X=1 \cap Y=0) = 3/8$ (4) $P(X=1 \cap Y=1) = 1/8$

149. Which of the following CAN NOT be probability generating function ?

(1) $s^3(2-s)^{-1}$ (2) $(1-s^{10})/10(1-s)$ (3) $s/(2+s)$ (4) $4^{-n}(1+3s)^n$

150. A bag cantains equal no. of Rs. 1.50 Paisa and 25 Paisa coins. The total amounts in the bag Rs. 35. What is the no. of each types of coins :

(1) 10 (2) 15 (3) 20 (4) 25

ROUGH WORK
रफ़ कार्य

अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली-काली बाल-प्वाइंट पेन से ही लिखें)

1. प्रश्न पुस्तिका मिलने के 10 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में *लिफाफा रहित प्रवेश-पत्र के अतिरिक्त,* लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. ***उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा। केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।***
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. ***उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।***
6. ***ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्नपुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्नपुस्तिका पर अनुक्रमांक और ओ० एम० आर० पत्र संख्या की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।***
7. ***उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।***
8. ***प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिए आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।***
9. प्रत्येक प्रश्न के उत्तर के लिए केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ***ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो संबंधित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।***
11. रफ कार्य के लिए प्रश्न-पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा उत्तर-पुस्तिका के अंतिम पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त *केवल ओ एम आर उत्तर-पत्र* परीक्षा भवन में जमा कर दें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की, भागी होगा/होगी।