OCET 2010

Code No.: 210101

Important : Please consult your Admit Card / Roll No. Slip before filling your Roll Number on the Test Booklet and Answer Sheet.

Roll No. *In Figures* *In Words*

O.M.R. Answer Sheet Serial No.

Signature of the Candidate : _____

Subject : M.Sc. (Hons. School)-Mathematics

Time : 90 minutes **Number of Questions : 75** **Maximum Marks : 75**

DO NOT OPEN THE SEAL ON THE BOOKLET UNTIL ASKED TO DO SO

INSTRUCTIONS

1. Write your Roll No. on the Question Booklet and also on the OMR Answer Sheet in the space provided and nowhere else.
2. Enter the Subject and Code No. of Question Booklet on the OMR Answer Sheet. Darken the corresponding bubbles with **Black Ball Point / Black Gel pen.**
3. Do not make any identification mark on the Answer Sheet or Question Booklet.
4. To open the Question Booklet remove the paper seal (s) gently when asked to do so.
5. Please check that this Question Booklet contains **75** questions. In case of any discrepancy, inform the Assistant Superintendent within 10 minutes of the start of test.
6. Each question has four alternative answers (A, B, C, D) of which only one is correct. For each question, darken only one bubble (A or B or C or D), whichever you think is the correct answer, on the Answer Sheet with **Black Ball Point / Black Gel pen.**
7. If you do not want to answer a question, leave all the bubbles corresponding to that question blank in the Answer Sheet. No marks will be deducted in such cases.
8. Darken the bubbles in the OMR Answer Sheet according to the Serial No. of the questions given in the Question Booklet.
9. Negative marking will be adopted for evaluation i.e., 1/4th of the marks of the question will be deducted for each wrong answer. A wrong answer means incorrect answer or wrong filling of bubble.
10. For calculations, use of simple log tables is permitted. Borrowing of log tables and any other material is not allowed.
11. For rough work only the sheets marked "Rough Work" at the end of the Question Booklet be used.
12. The Answer Sheet is designed for **computer evaluation**. Therefore, if you do not follow the instructions given on the Answer Sheet, it may make evaluation by the computer difficult. **Any resultant loss to the candidate on the above account, i.e., not following the instructions completely, shall be of the candidate only.**
13. After the test, hand over the Question Booklet and the Answer Sheet to the Assistant Superintendent on duty.
14. In no case the Answer Sheet, the Question Booklet, or its part or any material copied/ noted from this Booklet is to be taken out of the examination hall. Any candidate found doing so would be expelled from the examination.
15. A candidate who creates disturbance of any kind or changes his/her seat or is found in possession of any paper possibly of any assistance or found giving or receiving assistance or found using any other unfair means during the examination will be expelled from the examination by the Centre Superintendent / Observer whose decision shall be final.
16. **Telecommunication equipment such as pager, cellular phone, wireless, scanner, etc., is not permitted inside the examination hall. Use of calculators is not allowed.**

1. If P is the length of the perpendicular from the origin on the line whose intercepts on the axes are a and b then :

(A) $p = a + b$ (B) $\frac{1}{p} = \frac{1}{a} + \frac{1}{b}$

(C) $p^2 = a^2 + b^2$ (D) $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$

2. The bisector of the acute angle between $3x - 4y + 7 = 0$ and $12x + 5y - 2 = 0$ is :

(A) $11x - 3y + 9 = 0$ (B) $11x + 3y + 9 = 0$

(C) $3x - 11y - 9 = 0$ (D) $3x - 11y + 9 = 0$

3. The circle $x^2 + y^2 - 5x + 5y = 0$ has $7y - x = 5$ as :

(A) secant (B) normal

(C) tangent (D) diameter

4. The length of the chord $y - x\sqrt{2} + 4a\sqrt{2} = 0$ of the parabola $y^2 = 4ax$ is :

(A) $6a\sqrt{3}$ (B) $3a\sqrt{3}$

(C) $2a\sqrt{3}$ (D) $6a$

5. If two lines $x - \alpha = 0$ and $y - \beta = 0$ are conjugate with respect to the hyperbola $xy = C^2$ then

(A) $\beta = 2\alpha$ (B) $\alpha = \beta c$

(C) $\alpha\beta = c^2$ (D) $\alpha\beta = 2c^2$

6. The equation of the tangent of $\frac{\ell}{r} = 1 + e\cos\theta$ at the point α is :

(A) $\frac{\ell}{r} = -1 + e\cos\alpha$ (B) $\frac{\ell}{r} = 1 + e\cos(\theta - \alpha)$

(C) $\frac{\ell}{r} = e\sin\theta + \cos(\nu - \alpha)$ (D) $\frac{\ell}{r} = e\cos\theta + \cos(\theta - \alpha)$

7. The equation $x^2 + y^2 + z^2 + 2\lambda x - 1 = 0$ represents intersection of :

(A) circle and line (B) sphere and line

(C) sphere and plane (D) circle and sphere

8. **The function f : [0, 1]→[0, 1] defined by**

$$f(x) = \begin{cases} x & , x \text{ rational} \\ 1-x, & x \text{ irrational} \end{cases}$$

is :

(A) continuous at x = 1 (B) continuous at x = 0

(C) continuous at $x = \frac{1}{2}$ (D) continuous on [0,1]

9. **The dimensions of the largest rectangular field which can be enclosed with 200 metres of fencing are :**

(A) 50, 50 m (B) 60, 40 m

(C) 55, 45 m (D) 65, 35 m

10. **The value of** $\lim_{x \to 0} [x]\,[x+1]$ **is :**

(A) 1 (B) 0

(C) –1 (D) does not exist

11. **If P is a polynomial of odd degree and g is a continuous bounded function defined on IR then g–P**

(A) is positive (B) is negative

(C) has atleast one real root (D) has exactly one real root

12. **The l.u.b. of** $S = \left\{(-1)^n + \frac{1}{n}, n = 1,2,3,....\right\}$ **is :**

(A) 3/2 (B) 2

(C) 1 (D) does not exist

13. **The equation :** $2\cos^{-1} x = \sin^{-1}(2x\sqrt{1-x^2})$ **is valid for all x satisfying :**

(A) $-1 \le x \le 1$ (B) $0 \le x \le 1$

(C) $0 \le x \le \frac{1}{\sqrt{2}}$ (D) $\frac{1}{\sqrt{2}} \le x \le 1$

14. **If** α **and** β **are the roots of** $1 - x + x^2 = 0$ **then the value of** $\alpha^{2009} + \beta^{2009}$ **is :**

(A) –1 (B) 1

(C) 0 (D) 2

15. If $x + \frac{1}{x} = 2\cos\theta$ then $x^n + \frac{1}{x^n}$ is :

(A) $2\cos n\theta$ (B) $2\sin n\theta$

(C) $2i\cos n\theta$ (D) $2i\sin n\theta$

16. The function $f : \mathbb{R} \to \mathbb{R}$ defined by

$$f(x) = \begin{cases} x & , \text{ x rational} \\ -x & , \text{ irrational} \end{cases}$$

is :

(A) not 1–1 (B) not onto

(C) neither 1–1 nor onto (D) both 1–1 and onto.

17. $\int_0^1 \frac{2}{\sqrt{3+4x^2}}dx$ equals :

(A) $\text{Tan}^{-1}\left(\frac{2}{\sqrt{3}}\right)$ (B) $\text{Sin h}^{-1}\left(\frac{2}{\sqrt{3}}\right)$

(C) $\text{Cos h}^{-1}\left(\frac{2}{\sqrt{3}}\right)$ (D) $\text{Cot}^{-1}\left(\frac{2}{\sqrt{3}}\right)$

18. The function f(x) = [x] where [x] represents the greatest integer less than or equal to x is :

(A) continuous (B) differentiable

(C) is not continuous at integral points (D) is a derivative of some function

19. To remove the third term of $x^4 - 4x^3 - 18x^2 - 3x + 2 = 0$, the roots should be decreased by :

(A) 2 (B) 3

(C) 1 (D) –2

20. If $f(x) = x^5 - 2x^3 + 3x^2 + x + 1$ then f(1–i) is :

(A) 2 + i (B) 2 – i

(C) 1 – i (D) 1 + i

21. The equation $x^3 + x^2 - 2x - 1 = 0$ has :

(A) exactly one real root (B) three real roots

(C) exactly two real roots (D) no real root

22. Descartes method is used for solving :

(A) quadratic equations (B) cubic equations

(C) biquadratic equations (D) system of linear equations

23. The coordinates of limiting joints of the coaxial system to which the circles $x^2 + y^2 + 4x + 2y + 5 = 0$ and $x^2 + y^2 + 2x + 4y + 7 = 0$ belong are :

(A) (2, –1) and (0, 3)
(B) (2, 1) and (0, – 3)
(C) (– 2, –1) and (0, – 3)
(D) (– 2, –1) and (0, 3)

24. $\frac{x^2}{a^2} - \frac{y^2}{b^2} - \frac{z^2}{c^2} = 1$ represents :

(A) ellipsoid
(B) hyperboloid of one sheet
(C) hyperboloid of two sheets
(D) elliptic paraboloid

25. The curvature of a circle of radius 'a' is :

(A) a
(B) a^2
(C) 1/a
(D) $1/a^2$

26. If $\lim_{x \to 0} f(x) = 0 = \lim_{x \to 0} g(x)$. Then $\lim_{x \to 0} \frac{f(x)}{g(x)}$:

(A) always exists
(B) exists and equals zero
(C) does not exist
(D) may or may not exist

27. $\lim_{n \to \infty} \frac{(n!)^{1/n}}{n+1}$ equals :

(A) 1
(B) ∞
(C) e
(D) 1/e

28. The series $\frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \frac{4}{5} + ...$

(A) is convergent
(B) is divergent
(C) converges to 0
(D) converges to 1

29. The series $\sum \frac{n^2 - 1}{n^2 + 1} x^n$, $x > 0$:

(A) converges in [0, 1]
(B) converges in [1, ∞]
(C) converges in (0, 1]
(D) diverges in (1, ∞]

30. $\lim_{x \to 0} x \sin \frac{1}{x}$:

(A) does not exist
(B) equals zero
(C) equals 1
(D) equals –1

31. The maximum value of $\left(\frac{1}{x}\right)^x$ is :

(A) ∞ (B) $\left(\frac{1}{e}\right)^e$

(C) $e^{1/e}$ (D) 1

32. If $f : (a,b] \to \mathbb{R}$ is continuous, then :

(A) f is bounded (B) f is uniformly continuous

(C) f is uniformly continuous if $f(a^+)$ exists (D) f is differentiable

33. If $f(x, y) = \begin{cases} \frac{xy}{\sqrt{x^2+y^2}}, & x^2+y^2 \neq 0 \\ 0, & (x,y) = (0,0) \end{cases}$ then :

(A) f is continuous at the origin

(B) f is differentiable at the origin

(C) f is continuous and differentiable at the origin

(D) f is neither continuous nor differentiable at the origin

34. If $f(x, y) = 2x^4 - 3x^2y + y^2$, then :

(A) (0, 0) is a point of maxima (B) (0, 0) is a point of minima

(C) $f_{xx} f_{yy} - f_{xy}^2 = 0$ at (0, 0) (D) $f_{xx} f_{yy} - f_{xy}^2 > 0$ at (0, 0)

35. The function $f(x, y) = (x - y)^4 + (x - 2)^4$ has :

(A) maxima at (0, 0) (B) minima at (0, 0)

(C) minima at (2, 2) (D) maxima at (2, 2)

36. $x^3y'' + x^2y' + 3y = 0$ has :

(A) x = 1 as singular point (B) x = 0 as an ordinary point

(C) x = 0 is an irregular singular point (D) x = 0 as a regular singular point

37. The Laplace transform of sinh at is :

(A) $\frac{a}{s^2 - a^2}$ (B) $\frac{a}{s^2 + a^2}$

(C) $\frac{s}{s^2 + a^2}$ (D) $\frac{s}{s^2 - a^2}$

38. The inverse Laplace transform of the function $\frac{s}{s+5}$ is :

(A) $e^{-5t}+1$ (B) $-5e^{-5t}+1$

(C) $5e^{-5t}-1$ (D) $5\,e^{-5t}-1$

39. $y''+y=0, y(0)=1, y'(0)=1$ has solution :

(A) $\sin x-\cos x$ (B) $\cos x-\sin x$

(C) $\sin x+\cos x$ (D) $-\sin x-\cos x$

40. The inverse Laplace transform of $\frac{1}{s(s^2+1)}$ is :

(A) $1-\sin t$ (B) $1+\cos t$

(C) $1+\sin t$ (D) $1-\cos t$

41. $L[f'(t)]$ equals :

(A) $s\,L[f]-f(0)$ (B) $s\,L[f]+f(0)$

(C) $-s\,L[f]+f(0)$ (D) $s\,L[f]+sf(0)$

42. $x^2y''+xy'+(x^2-n^2)y=0$ is :

(A) Legendre's equation of order n (B) Bessel's equation of order n

(C) Hermite's equation of order n (D) Cauchy equation of order n

43. The general solution of $y=px+f(p)$ is :

(A) $y=cx+f(c)$ where c is a constant (B) $y=c$ where c is a constant

(C) $y=f(c)$ where c is a constant (D) $y=cx$ where c is a constant

44. A horizontal force F is applied to a small object P of mass 'm' on a smooth plane inclined to the origin at an angle θ. If F is just enough to keep P in equilibrium then F =

(A) $mg\cos^2\theta$ (B) $mg\sin^2\theta$

(C) $mg\cos\theta$ (D) $mg\tan\theta$

45. If forces of 12, 5 and 13 units balance at a point, two of them are inclined at :

(A) 36° (B) 45°

(C) 60° (D) 90°

46. If $V=e^{-x}\left[-yz\hat{i}+z\hat{j}+y\hat{k}\right]$ then curl V is :

(A) 2 (B) –1

(C) 1 (D) 0

47. The equation of motion of a simple pendulum of length a is :

(A) $a\frac{d^2\theta}{dt^2} = -g\sin\theta$ (B) $a\frac{d^2\theta}{dt^2} = g\sin\theta$

(C) $a\frac{d\theta}{dt} = g\sin\theta$ (D) $a\frac{d\theta}{dt} = -g\sin\theta$

48. A vector field F is conservative of :

(A) div F = 0 (B) curl F = 0

(C) grad F = 0 (D) |F| = 0

49. The time of sliding down an inclined plane of given base is least if inclination is at :

(A) $\pi/2$ (B) $\pi/3$

(C) $\pi/4$ (D) $\pi/6$

50. The horizontal range of a projectile fired at an angle α is maximum when α is :

(A) $\pi/3$ (B) $\pi/4$

(C) $\pi/6$ (D) $\pi/2$

51. If $f(x) = \begin{cases} \frac{1}{2^n}, & \frac{1}{2^{n+1}} < x \leq \frac{1}{2^n}, \\ 0, & x = 0 \end{cases}$ **then :**

(A) f is continuous (B) f is differentiable

(C) f is Riemann integrable (D) f has finitely many discontinuities

52. If f is a continuous function on [a, b] and $\int_a^b f(x)dx = 0$ **then :**

(A) f = 0 on [a, b] (B) f > 0 on [a, b]

(C) f < 0 on [a, b] (D) f takes both +ve as well as –ve values on [a, b]

53. The improper integral $\int_a^b \frac{dx}{(x-a)^n}$ **converges if :**

(A) n > 1 (B) n < 1

(C) n = 1 (D) n > 0

54. $\int_0^x \frac{\sin x}{x} dx$ **is :**

(A) convergent (B) absolutely convergent

(C) divergent (D) uniformly convergent

55. $\int_0^1 \left(\int_0^1 \frac{x-y}{(x+y)^2} dy \right) dx$ **equals :**

(A) 1 (B) 0

(C) 1/2 (D) –1/2

56. The Jacobian of the transformation from Cartesian coordinates to cylindrical coordinates is :

(A) r (B) r^2

(C) 1/r (D) $1/r^2$

57. The test for uniform convergence of a series of continuous functions is :

(A) Leibnitz test (B) Dirichlet's test

(C) Abel's test (D) Weierstrass M-test

58. The interval of convergence of $\sum \frac{x^n}{n!}$ **is :**

(A) $(-\infty, \infty)$ (B) $(0, \infty)$

(C) (0, 1) (D) [–1, 1]

59. The sum of the series $1 + \frac{1}{3^2} + \frac{1}{5^2} + \frac{1}{7^2} + ...$ **is :**

(A) $\pi^2/8$ (B) π^2

(C) $\pi^2/6$ (D) $\pi^2/4$

60. The volume of the ellipsoid $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$ **is :**

(A) π abc (B) $4/3 \pi$ abc

(C) 4π abc (D) $\frac{1}{3} \pi$ abc

61. The number of generators of an infinite cyclic group is :

(A) 1 (B) 2

(C) infinite (D) 3

62. The set $G = \left\{ \begin{bmatrix} a & 0 \\ 0 & b \end{bmatrix} : a, b \in \mathbb{R} \right\}$ under matrix multiplication forms :

(A) an abelian group (B) non-abelian group

(C) cyclic group (D) finite group

63. If G is a group of even order then :

(A) $a^2 = e$ for all $a \in G$ (B) $a^2 = e$ for atleast one $a \in G$

(C) $a^2 = a$ for all $a \in G$ (D) $a^3 = a$ for all $a \in G$

64. The total number of generators of a finite cyclic group of order 10 is :

(A) 1 (B) 2

(C) 4 (D) 5

65. $(a, b, c) \in \mathbb{R}^3$ belongs to the space generated by (2, 1, 0), (1, –1, 2) and (0, 3, – 4) if :

(A) $2a + 4b + 3c = 0$ (B) $2a - 4b + 3c = 0$

(C) $2a + 4b - 3c = 0$ (D) $2a - 4b - 3c = 0$

66. If $B = \begin{pmatrix} 1 & 2 & 3 \\ 0 & 2 & 3 \\ 0 & 0 & 3 \end{pmatrix}$. Then :

(A) B is similar to a diagonal matrix (B) B is not similar to a diagonal matrix

(C) B is lower triangular matrix (D) B is a diagonal matrix

67. Let T : V→V be a linear operator with dimension of V finite. If p(T) is the characteristics polynomial of T, then T is invertible if :

(A) constant term of p is zero (B) constant term of p is not zero

(C) constant term of p is positive (D) constant term of p is negative

68. If α, β are disjoint cycles of length r and s respectively in S_n, then the order of $\alpha\beta$ is :

(A) ℓ cm (r, s) (B) gcd (r, s)

(C) rs (D) r + s

69. The polynomial $1 + x + x^2 + ... + x^n$ is irreducible in Q[x] if :

(A) n is a prime (B) n – 1 is a prime

(C) n + 1 is a prime (D) n + 2 is a prime

70. $\int_0^{\Pi/2} \sin^4 x \cos^6 x \, dx$ equals :

(A) $3\Pi/512$ (B) $2\pi/510$

(C) $3\pi/520$ (D) $4\pi/513$

71. If A and B are two events such that P(A) = 0.3, P(B) = 0.6 and P(B/A) = 0.5, then P(A∪B) is :

(A) 0.6 (B) 0.5

(C) 0.75 (D) 0.3

72. If ten objects are distributed at random among ten persons, the probability that at least one of them will not get anything is :

(A) $\frac{10^{10} - 10}{10^{10}}$ (B) $\frac{10^{10} - 10!}{10^{10}}$

(C) $\frac{10^{10} - 1}{10^{10}}$ (D) $\frac{10^{10} - 9!}{10^{10}}$

73. The Gauss-Seidal method gives results faster when the pivotal elements are :

(A) smaller than other coefficients (B) larger than other coefficients

(C) equal to other coefficients (D) at least equal to one of the other coefficients

74. The number of positive roots of the equations $x^3 - 3x + 5 = 0$ is :

(A) 0 (B) 2

(C) 3 (D) 1

75. If a and a + h are two consecutive approximate roots of the equation f(x) = 0 as obtained by Newton's method then h is equal to :

(A) $\frac{f(a)}{f'(a)}$ (B) $\frac{f'(a)}{f(a)}$

(C) $-\frac{f'(a)}{f(a)}$ (D) $-\frac{f(a)}{f'(a)}$

ROUGH WORK

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Panjab University, Chandigarh

OCET-2010

FINAL ANSWERS / KEY

Subject: MSc(HS)(Mathematics)

1	2	3	4	5	6	7	8	9	10
D	A	C	A	D	D	C	C	A	B
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
C	A	D	B	A	D	B	C	B	A
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
B	C	C	C	C	D	D	B	X	B
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
C	C	A	C	C	C	A	X	C	D
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
A	B	A	D	D	D	A	B	C	B
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
C	D	B	A	B	A	D	A	A	B
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
B	A	B	C	D	A	B	A	C	A
71	**72**	**73**	**74**	**75**					
C	B	B	A	D					

Note: An 'X' in the key indicates that either the question is ambiguous or it has printing mistake. All candidates will be given credit for this question

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FINAL ANSWERS / KEY

Subject:

1	2	3	4	5	6	7	8	9	10
D	B	C	B	A	B	C	C	C	C
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
D	D	B	X	B	C	C	A	C	C
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
C	A	X	C	D	A	B	A	D	D
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
D	A	B	C	B	C	D	B	A	B
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
A	D	A	A	B	B	A	B	C	D
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
A	B	A	C	A	C	B	B	A	D
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
D	A	C	A	D	D	C	C	A	B
71	**72**	**73**	**74**	**75**					
C	A	D	B	A					

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Subject:

1	2	3	4	5	6	7	8	9	10
C	C	A	C	C	C	A	X	C	D
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A	B	A	D	D	D	A	B	C	B
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
C	D	B	A	B	A	D	A	A	B
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
B	A	B	C	D	A	B	A	C	A
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
C	B	B	A	D	D	A	C	A	D
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
D	C	C	A	B	C	A	D	B	A
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
D	B	C	B	A	B	C	C	C	C
71	**72**	**73**	**74**	**75**					
D	D	B	X	B					

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D	A	B	C	B	C	D	B	A	B
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A	D	A	A	B	B	A	B	C	D
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A	B	A	C	A	C	B	B	A	D
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
D	A	C	A	D	D	C	C	A	B
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
C	A	D	B	A	D	B	C	B	A
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
B	C	C	C	C	D	D	B	X	B
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
C	C	A	C	C	C	A	X	C	D
71	**72**	**73**	**74**	**75**					
A	B	A	D	D					

Note: An 'X' in the key indicates that either the question is ambiguous or it has printing mistake. All candidates will be given credit for this question

Panjab University, Chandigarh

OCET-2010

FINAL ANSWERS / KEY

Subject:

1	2	3	4	5	6	7	8	9	10
B	A	B	C	D	A	B	A	C	A
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
C	B	B	A	D	D	A	C	A	D
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
D	C	C	A	B	C	A	D	B	A
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
D	B	C	B	A	B	C	C	C	C
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
D	D	B	X	B	C	C	A	C	C
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
C	A	X	C	D	A	B	A	D	D
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
D	A	B	C	B	C	D	B	A	B
71	**72**	**73**	**74**	**75**					
A	D	A	A	B					

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