BUDHA DAL PUBLIC SCHOOL, PATIALA

FINAL EXAMINATION (19 March 2025)

Class : XI

Subject : Mathematics (041) (Set-A)

MM: 80

Time:3hrs.

General Instructions :

1. This Question paper contains - five sections A, B, C, D and E. Each section is compulsory.
2. Section A has 20 MCQ's questions of 1 mark each.
3. Section B has 5 questions of 2 marks each.
4. Section C has 6 questions of 3 marks each.
5. Section D has 4 questions of 5 marks each.
6. Section E has 3 case based questions of 4 marks each.

Section – A

Q1. If a set contains n elements, then number of elements present in its power set are

a) $2^n + 1$ b) 2^n c) $2^n - 1$ d) 2^{n+1}

Q2. If A and B are finite such that $A \subset B$, then $n(A \cup B)$ is

a) $n(B)$ b) $n(A)$ c) $n(A \cap B)$ d) ϕ

Q3. The domain of function $f(x) = \frac{x-2}{2-x}$ is

a) R b) 2 c) R + {2} d) R – {2}

Q4. Value of $\sin\frac{31\pi}{3}$ is

a) $\frac{\sqrt{3}+1}{2\sqrt{2}}$ b) $\frac{\sqrt{3}}{2}$ c) $\frac{\sqrt{3}-1}{2\sqrt{2}}$ d) $\frac{\sqrt{3}}{2\sqrt{2}} - 1$

Q5. If $|x| < a$, then

a) $x \in [-a, a]$ b) $x \in [-a, a)$ c) $x \in (-a, a)$ d) $x \in (-a, a]$

Q6. Standard form of i^{-39} is

a) $0 - \frac{i}{2}$ b) $0 + i$ c) $0 - i$ d) $0 + \frac{i}{2}$

Q7. The point $(-5, 4, 3)$ lies in octant

a) $OX'Y'Z$ b) $OX'YZ'$ c) $OX'YZ$ d) $OXYZ$

Q8. The third term of a G.P. is 4, then product of its first five terms is

a) 4 b) 4^3 c) 4^5 d) 4^4

Q9. The equation of parabola with focus (2, 0) and directrix $x = -2$ is

a) $y^2 = 4x$ b) $y^2 = 8x$ c) $y^2 = -4x$ d) $y^2 = -8x$

Q10. The distance between the lines $4x + 3y - 11 = 0$ *and* $8x + 6y - 15 = 0$ is

a) $\frac{6}{13}$ *units* b) $\frac{7}{10}$ *units* c) $\frac{10}{7}$ *units* d) $\frac{13}{6}$ *units*

Q11. Centre of circle $x^2 + y^2 - 4x + 6y - 51 = 0$ is

a) (2, 3) b) (-2, -3) c) (-2, 3) d) (2, -3)

A-1

Q12. Mean deviation of data 3, 10, 10, 4, 7, 10, 5 from mean is

a) 2 b) 2.57 c) 3 d) 3.57

Q13. The number of terms in the expansion of $(2x + y)^7$ are

b) 7 b) 8 c) 9 d) 10

Q14. Evaluate $\frac{7!}{5!}$

a) 40 b) 41 c) 42 d) 43

Q15. How many chords can be drawn through 21 points on a circle?

a) ${}^{20}C_2$ b) ${}^{20}C_4$ c) ${}^{21}C_2$ d) ${}^{21}C_4$

Q16. Conjugate of $\frac{1}{i-1}$ is

a) $\frac{1}{2}+\frac{i}{2}$ b) $-\frac{1}{2}+\frac{i}{2}$ c) $-\frac{1}{2}-\frac{i}{2}$ d) $\frac{1}{2}-\frac{i}{2}$

Q17. Equation of $x - axis$ in $3 - D$ plane is considered as

a) $y = 0, z = 0$ b) $z = 0, x = 0$ c) $x = 0, y = 0$ d) $x = y = z = 0$

Q18. The 20^{th} term of the sequence $a_n = (n-1)(2-n)(3+n)$ is

a) -7860 b) 7860 c) 7866 d) -7866

In the following questions a statements – Assertion (A) and Reason (R). Answer the question selecting appropriate option given below:

a) **Both A and R are true and R is correct explanation for A.**
b) **Both A and R are true but R is not correct explanation for A.**
c) **A is true but R is false.**
d) **A is false but R is true.**

Q19. Assertion (A) : If $\frac{d}{dx}[x|x|] = x + |x|$ for $x > 0$

Reason (R) : $|x| = \begin{cases} x, & x \leq 0 \\ -x, & x > 0 \end{cases}$

Q20. Assertion (A): Let $S = \{1, 2, 3, 4, 5, 6\}$, $A = \{1, 3, 5\}$ then $P(\overline{A}) = \frac{1}{2}$

Reason (R) = $P(\overline{A}) = 1 - P(A)$

Section – B

Q21. If $X = \{a, b, c, d\}$ and $y = \{f, b, d, g\}$ then find (i) $X - Y$ (ii) $Y - X$

Q22. If $A = \{1, -1\}$ then find $A \times A \times A$

Q23. A card is selected from a pack of 52 cards

a) How many points are there in sample space?
b) Calculate probability that card is (i) an ace (ii) black card

Q24. If $x + iy = \frac{a+ib}{a-ib}$, prove that $x^2 + y^2 = 1$

Q25. Using binomial theorem, evaluate $(102)^5$

A - 2

Section – C

Q26. If $f(x) = -|x|$, then find its

a) domain b) range c) also plot its graph

Q27. Prove that $\frac{\sin 5x+\sin 3x}{\cos 5x+\cos 3x} = \tan 4x$

Q28. Calculate mean and variance for the following data:

C.I.	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	3	7	12	15	8	3	2

Q29. Solve and represent solution on a number line $3x - 7 > 2(x - 6), 6 - x > 11 - 2x$

Q30. Suppose $f(x) = \begin{cases} a + bx, x < 1 \\ 4, \ x = 1 \\ b - ax, \ x > 1 \end{cases}$

and if $\lim_{x \to 1} f(x) = f(1)$. What are possible value of a and b?

Q31. A line perpendicular to the line segment joining the points (1, 0) and (2, 3) divide it in the ratio $1:n$. Find the equation of the line.

Section – D

Q32. a) Find sum of sequence $7, 77, 777, \ldots\ldots$ upto n terms

b) Are the points A (3, 6, 9), B (10, 20, 30) and C (25, -41, 5), vertices of a right angled triangle?

Q33. If $\tan x = \frac{3}{4}$, $\pi < x < \frac{3\pi}{2}$, find value of $\sin\frac{x}{2}, \cos\frac{x}{2}, \tan\frac{x}{2}$

Q34. Find co-ordinates, the vertices, length of major axis, minor axis, eccentricity and length of latus sectum of ellipse $4x^2 + y^2 = 400$

Q35a) A group of consists of 4 girls and 7 boys. In how many ways can a team of 5 members be selected if the team has (i) no girl (ii) atleast 3 girls

b) Expand $(x + 1)^4 + (x - 1)^4$

Section – E

Case Study based questions:

Q36. Read the following information carefully and answer the questions given below:

Ms. Meenu a Mathematics Teacher of Class XI wrote a problem on black board to test the preparation about the topic 'Relation and Function'. The problem is described as following :

Let $R = \{x, x + 5) : x \in \{0, 1, 2, 3, 4, 5\}\}$

a) Write R in Roster form (2)
b) Write its Domain (1)
c) Write its Range (1)

Q37. Suppose f is real valued function, the derivative of $f(x)$ is denoted by $f'(x)$ and by first principle method given by $f'(x) = \lim_{h \to 0} \frac{f(x+h)-f(x)}{h}$

Also let u *and* v are two functions of x. Then

I) $\frac{d}{dx}(u.v) = u\frac{dv}{dx} + v\frac{du}{dx}$

II) $\frac{d}{dx}\left(\frac{u}{v}\right) = \frac{v\frac{du}{dx} - u\frac{dv}{dx}}{v^2}$

On the basis of above information :

a) Find derivative of $f(x) = 100x$, using first principle method (2)

b) Find derivative of $\frac{x+1}{x-1}$ (2)

38. Read the following information carefully and answer the questions given below:

Two friends are playing with two dice. They throw them simultaneously and note the results on both dice.

i) Find the probability of an even number as the sum. (2)

ii) P (same number on both dice) (1)

iii) P (a total of atleast 10) (1)

A-4

BUDHA DAL PUBLIC SCHOOL, PATIALA

FINAL EXAMINATION (19 March 2025)

Class : XI

Subject : Mathematics (041) (Set-B)

Time:3hrs. **MM: 80**

General Instructions :

1. This Question paper contains - five sections A, B, C, D and E. Each section is compulsory.
2. Section A has 20 MCQ's questions of 1 mark each.
3. Section B has 5 questions of 2 marks each.
4. Section C has 6 questions of 3 marks each.
5. Section D has 4 questions of 5 marks each.
6. Section E has 3 case based questions of 4 marks each.

Section – A

Q1. If A and B are two sets then $A \cap (A \cup B)$ equals to

a) A b) B c) ϕ d) $A \cap B$

Q2. If A and B are finite sets such that $A \subset B$, then $n(A \cup B)$

a) $n(A)$ b) $n(B)$ c) $n(A \cap B)$ d) ϕ

Q3. If A is a finite set having n elements then number of relations that can be defined in A is

a) 2^n b) n^2 c) $2n$ d) 2^{n^2}

Q4. Value of $\cos(-1710^0)$ is

a) 0 b) 1 c) -1 d) 2

Q5. If $x = \sqrt{-16}$ then

a) $x = 4i$ b) $x = 4$ c) $x = -4$ d) all of these

Q6. Value of $i^{22} + i^{32}$ is

a) 0 b) 1 c) i d) $-i$

Q7. The solution set of the linear inequalities $-15 < \frac{3(x-2)}{5} \leq 0$ is

a) $(-23, 2]$ b) $(-20, 4)$ c) $[-23, 2)$ d) none of these

Q8. Evaluate $\frac{8!}{5!}$

a) 333 b) 332 c) 335 d) 336

Q9. How many chords can be drawn through 12 points on a circle?

a) ${}^{10}C_2$ b) ${}^{10}C_4$ c) ${}^{12}C_2$ d) ${}^{12}C_4$

Q10. In every term the sum of indices of a and b in the expansion $(a + 7b)^8$ is

a) 8 b) 9 c) 10 d) 7

Q11. The 9^{th} term of G.P. 2, $2\sqrt{2}$, 4, $8\sqrt{2}$ ..... is

a) 16 b) 64 c) 32 d) 128

B-1

Q12. A line passes through (x_1, y_1) *and* (h, k). If slope of line is m then

a) $y_1 - k = m(h - x_1)$ b) $k - y_1 = m(h - x_1)$

c) $h - x_1 = m(y_1 - k)$ d) $h - x_1 = m(k - y_1)$

Q13. The distance between the point $(1, 4, 5)$ *and* $(2, 2, 3)$ is

b) 5 b) 4 c) 3 d) 2

Q14. The derivative of the function $f(x) = 3x$ *at* $x = 2$ is

a) 0 b) 1 c) 2 d) 3

Q15. Which of the following are used as the measure of dispersion?

a) range b) quartile deviation c) standard deviation d) all of the above

Q16. A box contains 6 nails and 10 nuts. Half of the nails and half of the nuts are rusted. If one item is chosen at random then the probability that it is rusted or is a nail is k. Here k is refers to

a) $\frac{3}{16}$ b) $\frac{5}{16}$ c) $\frac{11}{16}$ d) $\frac{14}{16}$

Q17. Seven persons are to be seated in a row. The probability that two particular persons sit next to each other is

a) $\frac{1}{3}$ b) $\frac{1}{6}$ c) $\frac{2}{7}$ d) $\frac{1}{2}$

Q18. The number of possible orientations of hyperbola are

a) one b) two c) three d) four

In the following questions a statements – Assertion (A) and Reasbn (R). Answer the question selecting appropriate option given below:

a) Both A and R are true and R is correct explanation for A.
b) Both A and R are true but R is not correct explanation for A.
c) A is true but R is false.
d) A is false but R is true.

Q19. Assertion (A) : Point $(a + 1, a - 1, a^2 - 1)$ lies on y – axis if $a = -1$

Reason (R) : For any point (x, y, z) on y – axis, $x = 0, z = 0$

Q20. Assertion (A): The geometric mean of 64 and 4 is 8

Reason (R) = The geometric mean between a and b is $\sqrt{ab}$

Section – B

Q21. If $A = \{1, 2, 3, 4, 5\}$, $B = \{1, 3, 5, 8\}$, $C = \{2, 5, 7, 8\}$ then verify that $A - (B \cup C) = (A - B) \cap (A - C)$

Q22. If $A = \{-1, 1\}$ then find $A \times A \times A$

Q23. Prove that $\left(\frac{2+3i}{3+4i}\right)\left(\frac{2-3i}{3-4i}\right)$ is purely real

B-2

Q24. Prove that $\sum_{r=0}^{r=n} 5^r \cdot {}^nC_r = 6^n$

Q25. One card is drawn from a well shuffled deck of 52 cards. Calculate the probability that the card will be

a) A diamond b) A red card c) not a black card d) an ace

Section - C

Q26. If $f(x) = |x|$, then find (i) Domain (ii) Range (iii) Draw the graph also

Q27. Prove that $\sin x + \sin 3x + \sin 5x + \sin 7x = 4 \sin 4x \cos 2x \cos x$

Q28. Solve the inequalities and represent solutions on a number line

$5x + 1 > -24, 5x - 1 < 24$

Q29. Find co-ordinates of the foot of perpendicular from $(-1, 3)$ to the line $3x - 4y - 16 = 0$

Q30. $\lim_{x \to 1} \left[\frac{x-2}{x^2-x} - \frac{1}{x^3-3x^2+2x}\right]$

Q31. Find mean, variance for following data :

Classes	0-30	30-60	60-90	90-120	120-150	150-180	180-210
Frequency	2	3	5	10	3	5	2

Section - D

Q32. If $\tan x = \frac{3}{4}$, $\pi < x < \frac{3\pi}{2}$, find value of $\sin\frac{x}{2}, \cos\frac{x}{2}, \tan\frac{x}{2}$

Q33. i) A committee of 7 persons has to be formed from 9 boys and 4 girls. In how many ways can this be done when the committee consists of

a) exactly 3 girls b) atleast 3 girls

ii) Expand $(105)^3$ by using binomial theorem.

Q34. a) Find the sum of the series $5 + 55 + 555 + \ldots\ldots$ upto n terms

b) Find the equation of the set of points which are equidistant from the points (1, 2, 3) and (3, 2, -1).

Q35. Find co-ordinates of foci, the vertices, length of major axis, minor axis, eccentricity and length of latus rectum of the following ellipse $4x^2 + 25y^2 = 100$

Section – E

Case Study based questions:

Q36. Read the following information carefully and answer the questions given below:

Mr. Abhishek Dubey a Mathematics Teacher of Class XI wrote a problem on black board to test the preparation about the topic 'Relation and Function'. The problem is described as following :

Let A be set of first ten natural numbers and R be a relation of A defined by

$(x, y) \in R(=) \; x + 2y = 14$ i.e. $R = \{(x, y); x \in A, y \in A \; and \; x + 2y = 14\}$

Then answer the following questions based on above problem

a) Write relation R in roster form
b) Write Domain R
c) Write Range R

Q37. Suppose f is real valued function, the derivative of $f(x)$ is denoted by $f'(x)$ and by first principle method given by $f'(x) = \lim_{h \to 0} \frac{f(x+h)-f(x)}{h}$

Also let $u \; and \; v$ are two functions of x. Then

I) $\frac{d}{dx}(u.v) = u\frac{dv}{dx} + v\frac{du}{dx}$

II) $\frac{d}{dx}\left(\frac{u}{v}\right) = \frac{v\frac{du}{dx} - u\frac{dv}{dx}}{v^2}$

On the basis of above information :

a) Find derivative of $f(x) = 7x$, using first principle method (2)

b) Find derivative of $f(x) = \frac{2x^2+3x+4}{x}$ (2)

38. Read the following information carefully and answer the questions given below:

Two friends are playing with two dice. They throw them simultaneously and note the results on both dice.

i) Find the probability of an even number as the sum. (2)

ii) P (same number on both dice) (1)

iii) P (a total of atleast 10) (1)

B-4

BUDHA DAL PUBLIC SCHOOL, PATIALA

FINAL EXAMINATION (19 March 2025)

Class : XI

Subject : Mathematics (Applied) (241)

Time:3hrs. **MM: 80**

General Instructions :

1. This Question paper contains - five sections A, B, C, D and E. Each section is compulsory.
2. Section A has 20 MCQ's questions of 1 mark each.
3. Section B has 5 questions of 2 marks each.
4. Section C has 6 questions of 3 marks each.
5. Section D has 4 questions of 5 marks each.
6. Section E has 3 case based questions of 4 marks each.

Section – A

Q1. Which of the following number is equivalent to 24?

a) 1101111 b) 11000 c) 111111 d) 11001

Q2. Value of $\frac{\log 8 - \log 2}{\log 32}$ is

a) $\frac{2}{5}$ b) $\frac{1}{4}$ c) $-\frac{2}{5}$ d) $\frac{1}{3}$

Q3. Value of $(256)^{0.16} \times (256)^{0.09}$ is

a) 4 b) 16 c) 64 d) 256.25

Q4. It was Thursday on Feb 12, 2004. What was the day of the week on Feb 12, 2003?

a) Friday b) Wednesday c) Saturday d) Tuesday

Q5. The average of 100 numbers is 50. If one of the number which was 50 is replaced by 150, the new average will be

a) 50.5 b) 51 c) 51.5 d) 52

Q6. Which of the following is a null set?

a) $\{x: x \in N, 2x - 1 = 3\}$ b) $\{x: x \in N, x^2 < 20\}$

c) $\{x: x$ is an even prime >2$\}$ d) $\{x: x \in J, 3x + 7 = 1\}$

Q7. If $n(A \cup B) = 50, n(A) = 38, n(B) = 30$, then $n(A \cap B)$ is

a) 30 b) 19 c) 18 d) 20

Q8. The sum of 11 terms of an A.P. whose 6^{th} term is 5 is

a) 44 b) 55 c) 50 d) 66

Q9. If $x, x + 3, x + 9$ are first three terms of G.P, then x is

a) 1 b) 2 c) 3 d) 4

Q10. Value of ${}^{15}C_{11}$ is

a) 1456 b) 1365 c) 1563 d) 1653

Q11. The number of possible outcomes when a coin is tossed 6 times

a) 2^6 b) 6^2 c) Both d) None

Q12. If $P(A) = \frac{1}{3}, P(B) = \frac{1}{2}$ *and* $P(A \cup B) = \frac{5}{6}$ then events A and B are

a) independent b) independent and mutually exclusive
b) Mutually exclusive d) None of these

Q13. Variance of first five natural numbers is

b) 1 b) 2 c) 3 d) 4

Q14. At what rate percent per annum will a sum of Rs. 12000 become Rs. 13230 in 2 years?

a) 5% b) 5.5% c) 6% d) 6.5%

Q15. How much maximum deduction is allowed under sec 80 C?

a) Rs. 25,000 b) Rs. 1,00,000 c) Rs. 1,50,000 d) Rs. 10,000

Q16. Health and Education cess is payable on

a) Gross income b) Taxable income c) Income tax d) Education loan

Q17. If parabola $y^2 = 4ax$ passes through (3, 2), then length of latus rectum is

a) $\frac{2}{3}$ b) $\frac{4}{3}$ c) $\frac{1}{3}$ d) 4

Q18. If $P(A) = \frac{3}{10}, P(B) = \frac{2}{5}, P(A \cup B) = \frac{3}{5}, then\ P(B/A) + P(A/B)$ is

a) $\frac{1}{4}$ b) $\frac{1}{3}$ c) $\frac{5}{12}$ d) $\frac{7}{12}$

In the following questions a statements – Assertion (A) and Reason (R). Answer the question selecting appropriate option given below:

a) Both A and R are true and R is correct explanation for A.
b) Both A and R are true but R is not correct explanation for A.
c) A is true but R is false.
d) A is false but R is true.

Q19. Assertion (A) : If $f(x) = 2x^4 + 3x^2 + 2x, then\ f'(x) = 8x^3 + 6x + 2$

Reason (R) : $\frac{d}{dx}(x^n) = nx^{n-1}$

Q20. Assertion (A): $4^1 \times 4^{1/3} \times 4^{1/9} \times \ldots \infty = 8$

Reason (R) = $S_\infty = \frac{a}{r-1}, if\ |r| > 1$

Section – B

Q21. If $A = \{1, 2, 3, 4\}, B = \{3, 4, 5, 6\}\ and\ C = \{1, 3, 5\}$ then verify that $A - (B \cup C) = (A - B) \cap (A - C)$

Q22. Ram and Raj together erect a shed in 12 days. Ram alone can do it in 20 days. How much time would Raj take working alone to erect the shed?

Q23. The sum of three numbers in an A.P. is 24 and their product is 440. Find the numbers.

Q24. How many words can be made from the letters in the word 'MONDAY' assuming that no letter is repeated if

a) 4 letters are used at a time?
b) All letters are used at a time?

Q25. How much will Rs. 25000 amount to in 2 years at a compound interest if the rates for the successive years are 4% and 5% per year?

Section – C

Q26.a) Multiply the binary numbers 11010 by 111

b) Divide the given binary numbers 1110101 by 1001

Q27. Let $A = \{1, 2, 3, 4, 5, 6\}$. Define a relation R from A to A by $R = \{(x, y): x > y, x, y \in A\}$

a) Represent above relation in roster form and by an arrow diagram.
b) Write its domain and range .

Q28. A man saves Rs. 500 in the first month and in successive month he saves twice as much as in the previous month. This process continued for 6 months. From seventh month onwards he is able to save Rs. 500 less than previous month. Find his total savings for the year.

Q29a) If MADAM is coded as *?#?* and LOOM is coded as @%%*, then how will you code LAD?

b) Find A, B, C in

$$\begin{array}{r} A\ B \\ \times\ 3 \\ \hline C\ A\ B \end{array}$$

Q30. Two balls are drawn at random with replacement from a box containing 10 black and 8 red balls. Find the probability that

a) both balls are red
b) first ball is black and second is red
c) one of them is black and other is red.

Q31. Find co-ordinates of focus, equation of directrix and length of latus rectum of the conic represented by the equation $5x^2 = -12y$

Section – D

Q32. A man borrows Rs. 10,000 and agrees to pay back in 3 equal instalments of 6 month each. The first payment to be made at the end of 6 months of borrowing. Calculate the value of each instalment if the interest is charged 10% per annum. [Use $(1.05)^{-3}$=0.8638}

Q33. From following data, find values of a and b and Karl Pearsons' coefficient of correlation

x	10	13	16	a	25	26	30
y	6	8	10	12	b	15	19

Given that $\bar{x} = 20, \bar{x} = 12$

Q34. Three machines E_1, E_2 and E_3 in a certain factory producing electric bulbs, produce 50%, 25% and 25% respectively, of the total output of electric bulbs. It is known that 4% of the bulbs produced by each machines E_1 and E_2 are defective and that 5% of those produced by machine E_3 are defective. If one bulb is picked up at random from a day's production, calculate the probability that it is defective.

Q35. If the function $f(x) = \begin{cases} 3ax + b, x > 1 \\ 11, x = 1 \\ 5ax - 2b, x < 1 \end{cases}$ is continues at $x = 1$. Find values of a and b.

Section – E

Case Study based questions:

Q36. Read the following information carefully and answer the questions given below:

Seven friends T, U, V, W, X, Y and Z are sitting around a circular table facing towards centre. Z is second to the left of W and is the neighbour of X and Y. W is not a neighbour of V or X. T is the neighbour of U and V.

a) Write the seating arrangement. (2)
b) Write the neighbours of U. (1)
c) Who are the neighbours of X? (1)

Q37. Read the following information carefully and answer the questions given below:

In financial year 2019-20, Mr. Narendra Kumar Mani's (age 55 years) income from salary was Rs. 15,00,000 (exclusive of HRA) and income from interest on savings account was Rs. 18600. He deposited Rs. 15000 per month in GPF and paid Rs. 57000 as LIC premium. He donated Rs. 1,00,000 in Prime Minister's National relief fund. He paid Rs. 31,600 as interest on education loan for higher studies of his daughter. He also paid Rs. 2,12,500 as interest on home loan and Rs. 63,450 as principal of home loan.

Income Tax Slab for Financial Year 2019-20

(For individual tax payers below the age of 60 years)

Taxable Income	Income Tax
Upto Rs. 2,50,000	NIL
Rs. 2,50,0001 to Rs. 50,00,000	5% of taxable income exceeding Rs. 2,50,000
Rs. 5,00,001 to Rs. 10,00,000	Rs. 12,500 + 20% of taxable income exceeding Rs. 5,00,000
Above Rs. 10,00,000	Rs. 1,12,500 + 30% of taxable income exceeding Rs. 10,00,000

a) Find the amount invested or paid by Mr. Mani under section 80 – C. (2)
b) Under which section PM's National Relief Fund is deducted? (1)
c) Under which section interest on education loan is deducted? (1)

50%.

38. Read the following information carefully and answer the questions given below:

In a survey of 40 students, it was found that 21 had taken Mathematics, 16 had taken Physics and 15 had taken Chemistry, 7 had taken mathematics and Chemistry, 12 had taken Mathematics and Physics, 5 had taken Physics and Chemistry and 4 had taken all the three subjects.

i) Find the number of students who had taken Mathematics only. (2)

ii) Find the number of students who had taken Physics and Chemistry but not Mathematics. (1)

iii) Find the number of students who had taken exactly one of the three subjects. (1)