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Roll No:

Answer Sheet No:

Sig. of Candidate: _____

Sig. of Invigilator:

Federal Board SSC-I Examination General Mathematics Model Question Paper

SECTION – A

Time allowed: 20 minutes

Marks: 15

Note: Section-A is compulsory. All parts of this section are to be answered on the question paper itself. It should be completed in the first 20 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. Each part carries (01) mark.

i.	If $x =$	$=\sqrt{5+2}$ then $\frac{1}{x} = ?$			
	A.	$\sqrt{5}-2$	В.	$-\sqrt{5}+2$	
	C.	$-\sqrt{5}-2$	D.	$5 - \sqrt{2}$	
ii.	For what value of k, $x^2 + 4kx - 5$ is completely divisible by				
	A.	$\frac{3}{2}$	B.	1	
	C.	-1	D	$-\frac{3}{2}$	
iii.	The L	CM of $x^2 - a^2$ and $(x+a)^2$ is			
	A.	(x-a)(x+a)	B.	$(x-a)(x+a)^3$	
	C.	$(x-a)(x+a)^2$	D.	$(x+a)^2$	
iv.	The square root of $49x^2 + 112xy + 64y^2$ is				
	A.	$(7x+8y)^2$	B.	(7x+8y)	
	C.	(7x-8y)	D.	$\pm(7x+8y)$	
v.	What	What is the solution set of $\sqrt{x-4} = -2$?			
	А.	{8}	B.	$\{0\}$	
	C.	{2}	D.	{ }	
vi.	The so	e solution set of $ 3x-4 = x $ is:			
	А.	{2,1}	B.	{ }	
	C.	{0}	D.	{2}	
vii.	What are the multiplicative factors of $(x-3)^2 - 4$?				
	А.	(x-5)(x+1)	B.	(x+5)(x-1)	
	C.	(x-5)(x-1)	D.	(x+5)(x+1)	

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viii.	If A and B are square matrices, then which of the options is false?						
	А.	$\left(AB\right)^{t}=B^{t}A^{t}$	B.	$\left(A-B\right)^{t}=A^{t}-B^{t}$			
	C.	$AB \neq BA$	D.	$(kA)^t = k^t A^t$			
ix.	What A.	is the value of x in the figure when 10°	$y = 40^{\circ}$ B.	? 12.5° 4x y			
	C.	35°	D.	45°			
x.	What	is the value of x in the figure?	-				
	A. C	45° 30°	B. D	60° 30			
	C.	50	D.				
xi.	What	is the length of \overline{AD} in the figure?					
	A.	8	B.	9			
	C.	17	D.	$\sqrt{225}$ C 8			
				A 15 B			
xii.	Each	side of an equilateral triangle is 10 <i>cm</i>	n. The h	eight of triangle is			
	A.	5cm	B.	5√3cm			
	C.	10√2 <i>cm</i>	D.	10√3 <i>cm</i>			
xiii.	The v	olume of a right circular cylinder hav	ing radi	us $2cm$ and height $7cm$ is			
	A.	88 <i>cm</i> ³	B.	$29.3 cm^3$			
	C.	33.5cm	D.	11/.3 <i>cm</i> °			
xiv.	The p	erpendicular distance of the point (-1)	(3,4) from	m $y-axis$ is			
	A.	4	B. D	-3 5			
	C.	3	D.	5			
XV.	For w	hat value of x , distance between the	points A	A(4,x) and $B(1,0)$ is 5 ?			
	A. C	0+3	B. D	± 2 + 4			
	C.	±5	D.	<u>_</u> 7			



Federal Board SSC-I Examination General Mathematics Model Question Paper

Time allowed: 2.40 hours

Total Marks: 60

Note: Attempt all parts from Section 'B' and all questions from Section 'C' on the separately provided answer book. Write your answers neatly and legibly.

SECTION – B (Marks 36)

Note: Attempt all parts. Each part carries (04) marks.

Q2 i. Find the continued product of $(2x-3y)(2x+3y)(4x^2+6xy+9y^2)(4x^2-6xy+9y^2)$

OR

Factorize $4x^4 - 5x^2y^2 + y^4$

ii. If
$$x = \sqrt{5} + 2$$
 then find the value of $x^2 - \frac{1}{2}$

OR

Simplify the expression by rationalizing the denominator: $\sqrt{x^2 + x^2}$

$$\overline{y^2} - \frac{x^2}{y + \sqrt{x^2 + y^2}}$$

iii. If $P(x) = 3x^3 + kx - 26$ is divisible by (x-2), then find the value of k, if remainder is zero.

OR

Find the square root of $36x^4 - 96x^3 + 76x^2 - 16x + 1$

iv. Find the HCF of $x^3 + 27$, $2x^2 - 5x - 3$, $x^2 - 2x - 15$

OR

Find the LCM of
$$x^2 - y^2$$
, $x^4 - y^4$, $x^6 - y^6$
v. Solve $\frac{1}{2}(3+4x) \le 6\left(\frac{1}{3} - \frac{1}{2}x\right) - \frac{1}{4}(2+10x)$

and show the solution set on Number Line.

OR

Solve $\sqrt{2x^2 + 7\sqrt{2x} + 12\sqrt{2}} = 0$ by using the quadratic formula. vi. If $A = \begin{bmatrix} 5 & 2 \\ 2 & 1 \end{bmatrix}, B = \begin{bmatrix} 4 & 2 \\ 3 & -1 \end{bmatrix}$ then find $(AB)^{-1}$ **OR** If $A = \begin{bmatrix} -6 & 4 \\ 3 & -2 \end{bmatrix}$, then verify that $A \cdot A^{-1} = I = A^{-1} \cdot A$

vii. Draw a circle of radius 3*cm* with center at O. Draw a chord and shade the portion showing the major arc of the circle.

OR

Calculate radius of a sphere of volume $850m^3$

viii. Show that the points A(-1,1), B(3,2) and C(7,3) are collinear.

OR

Draw a right isosceles triangle with length of equal sides 4cm and ix. If $\triangle ABC \cong \triangle DEF$ then find the values of x, y and z.



SECTION – C (Marks 24)

Note: Attempt all questions. Each question carries (08) marks.

Q.3 Simplify $\frac{x^2 - 1}{x^2 + x - 2} \times \frac{x^3 + 8}{x^4 + 4x^2 + 16} \div \frac{x^3 + x}{x^3 + 2x^2 + 4x}$ OR

The sum of two positive numbers is 12 and the sum of whose squares is 80. Find the numbers.

Q.4 At a carry-out pizza restaurant, an order of 6 slice pizza and 2 juice drinks costs *Rs*. 360. A second order of 12 slice pizza and 5 juice drinks costs *Rs*. 750. Use Cramer's Rule to find the cost of a pizza slice and a juice drink.

OR

The length and breadth of a rectangle are (3x+2)cm and (3x-2)cm respectively. Find the value of x and the perimeter if area of the rectangle is $77cm^2$.

Q.5 Draw medians of a triangle ABC with $m\overline{BC} = 5cm$, $m\angle B = 60^{\circ}$ and $m\angle C = 30^{\circ}$

OR

Draw two intersecting circles with radii 4cm and 3cm. If their centres are 6cm apart, then draw two direct common tangents to the circles.