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.   How many students are in the class if 75% of them is 60?
A.   85   B.   75
C.   80   D.   100

ii.   A deceased having no children, left a property of worth Rs.100,000. What is the share of his widow?
A.   Rs.2,500   B.   Rs.25,000
C.   Rs.50,000   D.   Rs.12,500

iii.   Zakat on silver amounting Rs.1,500,000 is:
A.   Rs.37,500   B.   Rs.45,000
C.   Rs.15,000   D.   Rs.3,750

iv.   Which one of the following options is correct for Loss?
A. $S.P > C.P$ B. $S.P = C.P$
C. $S.P < C.P$ D. $S.P = M.P$

v.   The periodic instalment to be paid by the insurer is called:
A.   bonus   B.   Maturity
C.   premium   D.   mark up

vi.   If annual income of a flat is Rs.600,000 then at what rate, a tax amounting Rs.72,000 is being paid?
A.   10%   B.   12%
C.   17%   D.   24%

vii.   What is the simplified form of $3^{\frac{1}{2}} \div 3^{\frac{1}{3}}$?
A. $3^{\frac{1}{6}}$ B. 1
C. $9^{\frac{1}{6}}$ D. $3^{\frac{5}{6}}$

viii.   What is the scientific notation of an expression $\frac{0.084 \times 10^{10}}{4 \times 10^{3}}$?
A. 2.1×10^{5} B. 0.21×10^{6}
C. 0.021×10^{7} D. 21×10^{4}

ix. A.M between 3 and *x* is 15. What is the value of *x*?
   A. 10   B. 27
   C. 75   D. −10

x. If $R = \{(4,5), (5,4), (5,6), (6,4)\}$ then range of R is:
   A. $\{4, 10\}$ B. $\{5, 6\}$
   C. $\{6\}$ D. $\{4, 5, 6\}$

xi. If $L \subseteq M$, then which of the following sets represents $L \cap M$?
   A. M   B. L
   C. Φ   D. L U M

xii. What is the *x*- intercept of the graph of $\frac{x}{2} + 4y = 3$?
   A. $\frac{1}{2}$ B. 4
   C. 3   D. 6

xiii. What is the 7th term of a G.P: 2, 8, 32, ...
   A. 4096   B. 8192
   C. 65536   D. 2048

xiv. Which one of the following is a Median for the set of data: 9, 8, 5, 6, 8, 3?
   A. 8   B. 6
   C. 7   D. 6, 8

xv. Which one of the following is a Mode for the set of data: 6, 2, 4, 3, 4, 5, 4, 5?
   A. 3   B. 4
   C. 5   D. 2

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. Log book will be provided on demand.

SECTION – B (Marks 36)

Q.2 **Attempt all parts. Each part carries (04) marks.**

i. Out of his total income, Hamza spends 20% on house rent and 70% of the rest on household expenditure. If he saves Rs. 1800, what is his total income?

OR

If 4200 soldiers have food for 32 days sufficient at a rate of 12 hectograms per soldier. How many soldiers may leave so that the same food may be sufficient for 42 days at a rate of 16 hectograms per soldier?

ii. An amount of Rs. 4,00,000 left as an inheritance is to be distributed among a widow and four daughters. Workout the share of each.

OR

Calculate the amount of zakat on 10 tola gold and 50 tola silver, if the rate of gold is Rs. 200,000 per tola and the rate of silver is Rs. 2,500 per tola.

iii. If 15% discount on Marked Price of a heater is allowed and still makes a profit of 2%. If it is sold on Marked Price, what is profit percentage?

OR

Mr. Akram got a truck on lease for 5 years through a bank. The price of truck is Rs. 2,000,000. He paid 20% of price as down payment. Find mark up on the balanced amount at the rate of 17%.

iv. Rs. 3720 are to be divided into three shares in such a way that 1st share would be double, triple to the 2nd and 5 times to the 3rd are equal.

OR

A sum of money is divided among three friends Tashfeen, Ibtesam and Hassaan in ratio $10 : 8 : 6$. If Ibtesam gets Rs. 2000 more than Hassaan, then how much will Tashfeen get and what is the total sum of money.

v. Find compound profit on Rs. 600 for 4 years at 6% per annum.

OR

The total taxable income of a person is Rs. 4,30,000. If he is given rebate

Rs. 3,000 on the tax chargeable, then workout the amount he has to pay as an income tax @ 4.5%.

vi. Simply $\dfrac{(2ab^3)^4 \times (6a^2b)^2}{4ab \times 16a^3b^2}$

OR

Prove that $log\left(\dfrac{a^2}{bc}\right) + log\left(\dfrac{b^2}{ca}\right) + log\left(\dfrac{c^2}{ab}\right) = 0$

vii. Insert three Arithmetic Means between 3 and 31.

OR

Find 21st term of a G.P where the 5th term is 243 and the common ratio is 3.

viii. If $A = \{1, 7, 11, 15, 17, 21\}$, $B = \{11, 17, 19, 23\}$ and $C = \{2, 3, 5\}$ then verify that $(A \cap B) \cap C = A \cap (B \cap C)$

OR

If $S = \{1, 2, 4, 8\}$ and $T = \{1, 3, 9\}$ then state domain and range of a relation $R = \{(x, y)|x \in S, \ y \in T \wedge y > 2x\}$ in tabular form.

ix. Draw the graph of $y = -\dfrac{1}{2}(x) + 2$

OR

The following table shows conversion from US ($) to UK (£) for various amounts of money.

$	50	100	150	200
£	41	82	123	164

Plot these points on a graph paper and draw a straight line through them. Use graph to convert 75 $ into £, 125 $ into £ and 175 $ to £.

SECTION – C (Marks 24)

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

Q.3 Three persons invested an amount of Rs. 50,00,000 in a business with shares' ratio 2:5:9. They earned a profit of Rs. 500,000. If they are interested to windup their business, what amount every share holder would get?

OR

If $U = \{7, 8, 9, 10, 11, 12, 13, 14\}$, $A = \{7, 10, 13, 14\}$ and $B = \{7, 8, 11, 12\}$ then verify that $(A \cap B)^c = A^c \cup B^c$ using Venn diagram.

Q.4 Evaluate by using the logarithm $\dfrac{\sqrt[3]{8.59} \times (55.6)^2}{2.51 \times \sqrt{2.12}}$

OR

Find the value of v from the following by using logarithm.

$v = \dfrac{\sqrt{h}}{\pi R^2 - \pi r^2}$ where $h = 1289, R = 65, r = 55$ and $\pi = 3.14$

Q.5 A person insured his bus worth Rs. 2,500,000 @ 4.5% for 6 years. After two years, he claimed for Rs. 400,000. How much loss had he recovered if rate of depreciation is 10%?

OR

The marks distribution of 100 students in an entry test is tabulated. Find mean and variance marks.

Obtained Marks	$0 - 20$	$21 - 40$	$41 - 60$	$61 - 80$	$81 - 100$
Frequency	10	15	25	35	15