Math:

Q1: Find x if $\frac{20}{x} + \frac{16}{x} = 12$

Q2: complete the sequence 2,3,7,23, ...

Q3: Ages of Sohail Afzal and Bilal are 17,16,12 years respectively, if the age of Aslam is included the average of the ages increased by 5. Find age of Aslam.

Q4: find the sum of the sequence of numbers: 10,20,30, 40, ……. 1000. Formula. $s_n = \frac{n(a_1 + a_n)}{2}$

Q5: A train travelled a distance of 6000 km from Lahore to Karachi in 22 hours. From Karachi to Lahore it took 28 hours. Find average speed.

Q6: find the value of $\frac{n}{m}$ if 9m = 4n.

Q7: the cost of n books is r rupees. Find the cost of m books. Apply unit formula or ratio.

Q8: a train covers 300 km in 3 hours and 20 minutes. If it covers the same distance in 2 hours and 40 minutes then find the average speed.

Q9: find the 101^{th} term in the following sequence. 1,4,7,10, ... formula $a_n = a_1 + (n - 1)d$

Q10: if x+3y= 12 and -2x-4y = 24 then find the value of x and y.

Q11: if 6 men can complete a work in 15 hours the how many hours will it take if 10 men working together.

Q12: find the 71st term of the sequence 4,7,10,13 . . . . . formula $a_n = a_1 + (n - 1)d$

Q13: A person deposits one million rupees in the bank. The bank pays him an interest of 10% Find his amount after 3 years. Formula: *Initial amount (1 + rt)*

Q14: 8 is 5% of what number?

Q15: Find the geometric mean of the following numbers: 2,4,8. Formula $\sqrt[n]{x_1 * x_2 * x_3}$

Q16: 7/6 of 96 is what number?

Q17: what is the sum of following sequence: 5,10,15,…..,5000. Formula**:: n =** $\frac{a_n - a_1}{d}$ **+ 1** the apply sum formula $s_n = \frac{n(a_1 + a_n)}{2}$

Q18: Simplify: 4 + 4 – 4 * 4/4

Q19: if f(x) = $2x^2 - 2x$-1 ten f(-1)?

Q20: What is the solution to the following equation? $(2)^2 + \frac{1}{(2)^2} + (2)^{-2} + \frac{1}{(2)^{-2}}$ =?

Q21: if x= -2, then what is the value of the function: f(x) = $x^2 - 2x + 4$

Q22: A student obtained marks 60,50,70,75 and 85 in physics, Chemistry, Statistics, English, Biology, respectively. How many scores he get in Math to get average of 71 in all 6 subjects?

Q23: how many feet are in 4.5 meter? 1 meter = 3.281 feet.

Q24: Person A completes a work in 10 days and person B completes that in 12 days. How much time it will take if they both work together? Formula: $\frac{AB}{A+B}$

Q25: 3x+9y =12 and 10x-18y=24 then find x and y.

Q26: A person sold a property in one million rupees. Agents gets 10% commission and pays 12% tax as income tax. Find the amount of income tax of the commission agent. 12% of 10% of 1000000.

Q27: find amount of profit at rate of 10% if purchasing cost is 15000?

Q28: Larger circle A has inscribed circle B whose Diameter is equal to radius of circle A. if diameter of B (radius of A) is 7 cm find area of circle A.

Q29: Sum of two number is 21. Their ratio is 2:1. Find the smaller number.

Q30: Find the Area of equilateral triangle if its one side is equal to10 cm.

Formula Area of equilateral triangle = $\frac{\sqrt{3}}{4}\ side^2$.

Q31: find x if 4x<x<$x^3 < x^2$.

Q32: A covers 100m distance in 20 sec and B covers same distance in 25 sec. How much far will be B when A reaches the finish line?

Q33: width of a rectangle is increased by 25% while length remains constant. Find the %age change in area of rectangle.

Q34: How many degrees an hour hand of the clock covers in 5 minutes.

Q35: sum of three consecutive numbers is 255. Find the three numbers.

Q36: Unit digit of two digit number (unit)… product of number by sum of its digits is 144. Find the number.

Q37: x = ¼ find x^{-4}.

Q38: 3 Men or 6 women can complete a task in 20 days. How much time will be required for 12 men and 8 women working together to complete the task.

Q39: 16 is added to 1/3 times of a number which results in 3 times of that number. Find the number. Hint: 16 + 1/3(x) =3x.

Q40: three persons A,B,C divide Rs.2000 among themselves in such a way that share of A and B is equal while C gets ¼ of sum of A and B's Share. Find the share of C.

Q41: in how many ways 6 cups can be arranged on the shelf?

Q42: 30 women can complete a task in 15 days. How much time T will required for 10 women to complete the same task?

Q43: reciprocal of cosθ?

Q44: width of a rectangle is twice the length. Perimeter of rectangle is 102. Find the length. P= 2(L+W).

Q45: Among 200 students 40% are Girls. 10 % of the girls and 25% of the boys were selected for a medical study. Find the total number of students selected for the study.

Q46: Alina is twice the age of Adil. 6 years ago Alina was 5 times of Adil's age. Find the present age of Alina.

Q47: find Zakat on Rs.250000.

Q48: 60% of 60% of 60 is what number?

Q49: which of the following is / is not a prime number?

Q 50: Money invested by two persons is 49000 and 24500. Find the ratio of their investment.

Q51: A Bell was tolled 16 times in one minutes. 88 tolls need how much time?

Q52: 12 kg of carrots cost Rs.492. how much two 2 kg carrots will cost?

Q53: 2.5 % of 300000 is what number?

Q54: 18 is average of 26 numbers. Find the sum. Avg = sum / n.

Q55: simplifiy 1/ 5^{-2}.

Q56: Ali has Rs.7.2 He has coins of 50 paisa and 10 paisa. What would be the minimum number of coins Ali has?

Q57: 54 is what % of 9?

Q58: 5 type writes can complete a document compilation in 2 hours. How much time is needed for 12 typewriters to compile the same document?

Q59: class of 40 students contains 24 girls. Find the ratio of boys to girls.

Q60: a person pays 15% of his monthly income as tax which is Rs.3000. find the monthly income.

Q61: surface area of cube is 150 cm^2. Find the volume of the cube.

Surface area of cube = 6*$side^2$ $6L^2$,Volume = L^3.

Q62: Find range of 6,4,8,9,7,8,6,2,3.

Q63: a person reads 36 pages in 60 min. how many pages can he read in 36 min?

Q64: All angles of a triangle are less than 90. What type of triangle is this?

Q65: 5 persons are in a group. U, V from China. W,X,Y are form Hong Kong. W and U are white skin and Y,X,and V are dark skin. who is the white skin person from Hong Kong?

Q66: what is $\frac{12}{3}$ of $\frac{3}{33}$?

Q67: 156% in decimal is?

Q68: if K is divided by 7 remainder is 4, what will be remainder if K^2 is divided by 7?

Q69: $7a^2b * 7ab^2 = ?$

Q70: Sana is 6 year older than Hina. 3 years ago Sana was the twice the age of Hina. What is present age of Sana?

Q71: 11 books cost 3.5 rupees. 35 books will cost how many rupees?

Q72: volume of a cube is 216. Find the surface area of the cube. Area = $6a^2$

Q73: 6 is added to 4 times of a number which results 22. Find the number,

Q74: $\sqrt{728}$ = ?

Q75: $cos^2\theta - sin^2\theta = ?$

Q76: Average of 31,25 and y is 37. What is y?

Q77: x = $8^{1/3}$. find the value of x.

Q78: how many degrees are in half pie chart?

Q79: Total weight of Father and Son is 250 kg. if Father's weight is 10 kg more than 3 times of his son's weight, what is the weight of son?

Q80: in an Exam, 200 students failed in English and 800 students failed in Physics. Total of 900 students were failed in both subjects. What number of students failed in both English and Physics?

Hint: D-Morgan's laws of union and intersection.

Q81: sum of A and B is 10. What is average of A and B?

Q82: Average is A, first umber is x find second number y.

Q83: ¼ of this year students have average above 90, ½ of the remaining have average between 80 and 90. Find the students who have average less than 80.

Q84: 20(x+y) = 70, find average of x and y.

Q85: $12\frac{1}{2}$ % of 96 is what number?

Q86: what single discount is equivalent to two successive discounts of 10% and 15%? (x+ y) - $\frac{x*y}{100}$

Q87: if 5x+11=31. Find the value of x? 4.

Q88: if a rectangle has sides 2x and 3x and area of rectangle is 24,what is the value of x?

Q89: a farmer raises chicken and cows. Total heads of both chicken and cows are 120 and total legs are 300. Find the no. of cows / hens in farm. head = x+y = 120, legs = 2x+4y=300.

Q90: if x-4 is 2 greater than y, then x+5 is how much greater than y? Hint: use number line to scale value of y.

Q91: which one of the following has smallest value? ½. 0.2,$(0.2)^2$, $(0.2)^3$

Q92: the number P is 4 more than 3 times the number R. The sum of the number P and R is 10. Which of the following pair of equation could be used to the value of P and R?

P = 4+3R, P+R = 10,

Q93: what is the angle between two hands of the clock at 12 o Clock? Formula for angle between two hands of clock : 30*hr - $\frac{11}{2}$ min.

Q94: which of the following is factor of the $3x^3 - 11x^2 - 42x$?

Q95: A circle with radius 3 feet has circumference how many foot long? C = 2πR

Q96: 14 is 2/3 of what number?

Q97: what is the volume in cubic inches of a cube whose surface area is 216 square inches? Hint: S = $6a^2$, V = a^3.

Q98: if a(7/11) = (7/11)b then b/a = ?

Q99: if Circumference of a circle is equal to Perimeter of a square (4*side = 4π) whose sides are π. What is radius of circle? 4π = $2\pi R$.

Q100: Jibran says that 4/5 of his class comes to school on foot. If total students are 40 then how many students don't come on foot?

Q101: the product of (1+2), (2+3), and (3+4) is equal to one half of the sum of 20 and x . what is value of x? 3*5*7 = (20+x) / 2 105*2 -20 = x 210-20=190=x

Q102: when k is subtracted from 10 and difference is divided by 2, result is 3. What is the value of k?

Q103: $a^2b = 12^2$, b is smallest odd integer then a could be divisible by all of the following except.. 3,4,6,9,12.

Q104: $\frac{900}{10} + \frac{90}{100} + \frac{9}{1000}$ =?

Q105: a bakery uses a special flour mixture that contains corn, wheat, and barley in ratio of 3: 5: 2. If a bag of mixture contains 5 pounds of barley then how much pounds of wheat / corn does it have?

Q106: 23/1000 + 6/100 + 7/10 =?

Q107: for which of the following values of n is $\frac{30}{n}$ not an integer?

Q108: A man completes 2/15 of his journey by aero plane, 2/5 by train and rest by taxi. What part of his journey does he completes by taxi? $1-\frac{2}{15}-\frac{2}{5}=\frac{7}{15}$

Q109: Simplify $2\frac{1}{7}-2\frac{1}{2}$ / $2\frac{1}{4}+1\frac{1}{7}$.

Q110: 125% of 260 + x% of 700 = 500. Find x.

Q111: 3:4 is equivalent to a:12. Find a.

Q112: next number in series 2,16,1024 is .

Q113: find the greatest number which divides 2300 and 3500 leaving 32 and 56 respectively as remainder. Find HCF after subtracting remainders from original terms.

Q114: Ali is 5 times as old as his son. 2 years ago the sum of their ages was 50. Find the age of Ali.

Q115: length of a square increased by 8cm.its area becomes 400 sqcm. Find perimeter.

Q116: $a^2 - b^2 = ?$

Q117: Muzamil's quiz score in math were 95, 87, 84, 84 and 60. Find the average score.

Q118: if p-7 = 5-p then p?

Q119: A factory worker can produce 20 toys in 8 hours a day. If there are 42 workers in total how many toys are produced every hour.

Q120: the sum of two numbers is 40 and their difference is 4. 4. The numbers are:

Q121: A man travels a distance of 20 miles at 60 miles/hr and returns the same route at 40 mile/hrs. Find total time in minutes.

Q122: $\sqrt{7}$/200 = ?

Q123: the avg age of A and B is 20 years, that of B and C is 19 years, and that of C and A is 21 years. Find the ages of A /B / C. OR

The average age of A and B is 20 years. If A is to be replaced by c, the average would be 19 years, The average age of C and A is 21 years. The ages of A, B and C in order (in years) are:

Solution:

(A+B) / 2=20 years A + B = 40 years .....(i)
(C+B) / 2=19 years C + B = 38 years .....(ii)
(C+A) / 2=21 years C + A = 42 years .....(iii)

Add equation (i), (ii) and (iii) 2 (A + B + C) = 120 years A + B + C = 60 years .....(iv)
From equation (i) and (iv) 40 + C = 60 C = 20
From equation (ii) and (iv) A + 38 = 60 A = 22 years
From equation (iii) and (iv) B + 42 = 60 B= 18 years A, B, C = 22, 18, 20

Q124: if area of square of side x is 5 then what is the area of square of side 3x.

Q125: in a certain class the ratio of men and women is 3:5. If class has 24 students how many women are there in the class?

Q126: a lorry can cover a distance of 100 km in 2 hours and 30 mins. A private car with the speed of 55km/hr. determine the ratio of their speeds.

Q127: A number exceeds another number by 5 the sum of number is 19. Find the smaller number.

Q128: if Arif can read 39 pages of a book in half an hour, how long will it take him to finish a book that has 1287 pages.

Q129: if Ahmad purchases a watch for 600 and pay 15% sale tax. Total amount spent on watch is:

Q130: A larger gear 50 inches in diameter times a smaller gears 30 inches in diameter. If the larger gear makes 15 revolutions then smaller gear make in same time.

Hint revolution = $2\pi r$. Find the radius and apply the formula. REV1 * $2\pi r$ = REV2 *$2\pi R$. Rev1 is unknown X will be multiplied because smaller gear will make more revolutions than larger gear. X *30 = 50 (for one revolution) X*30 = 15 * 50 (for 15 revolution) X = $\frac{15*50}{30}$ 25. So 15 revolutions of larger gear will result in 25 revolutions in smaller gear.

Q131: 60% of a number when added to another number is increased by 1.5 times to original number. What is ratio of these numbers? 60%*x +y = y + 1.5y, find x/y. 0.6x + y = 4.5y 06x = 3.5y $\frac{x}{y} = \frac{35}{6}$

Q132: in how many ways 4 boys and 3 girls can be seated in a row so that they are alternate.

2 * (boys)! * (girls)! 2 is multiplied due to order could **left-to-right or right-to-left** 2 * 4! * 3! 2*24*6 288

Q132 (a): in how many ways 4 boys and 3 girls can be seated in a row. (boys)! * (girls)! 4! *3! 24*6 = 144.

Q132 (b): in how many ways 4 boys and 4 girls can be seated around the round table so that they are alternate. one of the member must take a one fixed seat as reference therefore m! * (n-1) (m-1) * n! !4!*3! 24 * 6 = 144

Q132 (c): in how many ways 10 people can be seated around the round table? (n-1)! 9! = 362880

Q133: the order of differential equation is the order of highest derivative occurring in the equation.

Q134: y + p(x)y = q(x), x∈I is called -------- equation. If q(x) is not equal to 0.

Q135: the equations x+2y = 1 and 2x+4y=3 represent a pair of ---------- lines and hence there is no point of intersection.

Q136: two linear systems are said to be ---------- if one can be obtained from the other by a finite number of elementary operations.

Q137: a matrix Q is said to be row reduced echelon form if ----------.

Q Types: Two dice are drawn. Simultaneously. Probability of sum of dice is x,

Q: Two dice are drawn. Simultaneously. Probability of product of dice is multiple of 3.

Q: A bag has 7 red and 5 Green balls. One ball is drawn and put back. Second ball drawn. What is Probability ball drawn is [Green, Red],

Q: A bag has 8 Black and 6 White balls. One ball is drawn and put back. Second ball drawn. What is the probability that both balls drawn are white /black.

Q: 5 * 8 – 2+5 -5

Q: 20 % of salary was spent on lodging, 10% on travelling, 40% on food, 10% on miscellaneous expenses. 1500 was saved at the end. Find the salary.

Q: Word problems.

Q: linear equation solving.

Q Types: A couple has a son and a daughter. Age of a father is three times of his daughter. Age of son is half that of mother. Wife is 9 year younger than his husband. Son is 7 years older than daughter. Find age of the mother.

Q: Which of the following 5 digit number is perfect cube.

Q: which of the following number should be multiplied with X so that resultant is perfect cube.

Q: First term of geometric Progression is X common ratio is $\frac{1}{2}$ find 7^{th} term.

Q: GM of progression is 1024. Common ratio is $\frac{1}{2}$ find 7^{th} term.

English:

Vocabulary relevant questions (synonyms/antonyms) in hat-1 test:

Frayed: Ragged, Worn-Out

Solemn: Very serious, sad, somber

Ramble: move aimlessly

Acquaint: accustom, familiarize

Modest: average, intermediate, bashful, shy

Hustle: shove, jostle[1]. haste, hurry [2]

Deviant: aberrant, atypical

Benign: mild, anodyne (alleviate pain), safe, harmless

————————-

In quantitative analysis questions came from

Mostly Probability

Percentage

2-3 questions were from ratios

Find the sequence of terms /sum of sequence

3 questions were from Mean, mode & median

2 DMAS related questions

2 from finding the area of square

3 from Geometry related like parallel line segments and cirlcle related

1 Synonyms

Fulsome:: enthusiastic, profuse, abundant

Refute:: disapprove, rebut , reject

Emaciated :: thin, skeletal , skinny, lessen,

Abase :: belittle, degrade, humiliate

Aberration :: anomaly , deviation,

Infallible: Error free.

Grandiose:

Succumbed: fail to resist. Give in,

Secede: withdraw formally,

Foster: Encourage

Kilter: State, Order, Condition.

Repeal :: revoke, rescind, cancel

Assist :: help

Cunning :: wily, artful, guileful

Slick :: shiny, glossy, smooth

Costive:: slow, constipated, stingy (کنجوس)

Correlation :: relating on common-ground,

Rebellion :: treason, Mutiny, Revolt, Uprise

Compensation :: indemnity, remuneration

Frugal :: economical / thrifty

Gradual :: incremental / step-by-step

Deceitful :: fraudulent

Clarity :: clearness / lucidity

Passion :: zeal / excitement.

Pensive :: thoughtful / broody , cognitive

Instability :: imbalance, precarious / shakiness

Astonish :: Startle , stun , stupefy

Depression :: melancholy , recession

Digression :: deviation , divagation

Recover :: regain , rescue,

Reveal :: make known, disclose , bare , uncover,

Revere :: setback, undo, invert,

Desist :: abstain , refrain, stop, cease , hold-back

Odious :: revolting, repulsive, repugnant

Frivolous :: of little value / triffle

Cumulative :: accumulative , additive, accretive

Distribute :: divide, assort , dispense

Inappropriate :: ill-suited, unfitting

Regal :: majestic, splendid, relating to rolyals

2 Analogy

Steering : Car needle : Cloth, Paddle : Canoe, Knife : Whittle, Pallet : Painter

Book : :Publisher Movie : Director, Newspaper : Writer, Act : Novelist, Film : Producer

Pain : Ache Fever: illness , suffering: trouble, Lazy: lethargic, Damp:Arid

Platform : Train aero-place :Aerodrome, Hotel : Tourist, Quay : Ship, Footpath : Traveller

Traffic : Road Blood Veins, Roots : Tree, Car : Garrage

Cool: Cold pretty : beautiful

Fragile : Crack Cemetery : Death, Pliable : Bend, Hydro: Water, Irreducible: Reduced

Burkina Faso: Ivory Cost :: Bahrain: Manama.

Kenny Rogers: country song :: Nusrat Fateh Ali : Qawali.

Commemorate: Honor :: Bold: Meek.

Shepherd : flock :: Pastor : Congregation

Vegetate: Active :: produce : trivial

Proponent : theory :: Law : Rule

Species: Organism :: Specialty : Physician

Trap : Game :: net : fish

Tiled : Roof :: snow flake : Glacier

Dwindle: Size :: Dissipate : strength

Hungry : Famished :: Happy : intense

Synopsis : Condensed :: plagiarism: pirated.

Discharged : Soldier :: Transported : Member

Cut :; Laceration :: Carbuncle : Swelling

Apostate : Faith :: Potentate : Religion

Blame : Scapegoat :: convict : Punishment

Flake: Snow :: Drop: Rain

Tragedy : Sad :: Comedy : Humor

Train : Track :: Gun : Barrel

Yarn : Boredom ;: Smile : Amusement

Pesticide: Plant :: Vaccine : Body

Wrench : Tool :: Carrot : Vegetable

Traveler : Destination :: Refugee Shelter

Knife: Chopper ;: Quilt : Blanket

Ornament : Gold :: Needle : Steel

Large : Enormous :: Plump : Fat

Cattle : Drove :: Chicken : Brood

Shield : Soldier :: Helmet : rider

Patriotic : Nationalist :: Frugal : Misery

Microscope : Observation :: Yardstick : Measurement

Hermetic : Air :: Opaque : Light

Component : System :: atom : matter

Search : find :: study : learn

3 Antonyms:

Enervate :: lessen energy, weaken

Hatred :: loathing, abhorrent, distaste

Eccentricity :: madness, abnormal, unconventional

Conformity :: compliance with rules / laws. Orthodox, traditionalism

Revere :: uphold, stick to

Zealous :: apathetic , indifferent

Impotent:: fertile , powerful, fruitful

Idle :: busy, active, alive

Fathom :: [apprehensible, coherent, accessible] cryptic, esoteric, mysterious guess / misinterpret

Secret :: uncover, display, exhibit

Skimpy :: adequate, enough, sufficient

Niche :: relocate / dislodge

Agony :: delight / joy

Dispute :: accord , consensus, harmony

Docile, [compliant , submissive, pliant] insurgent , mutinous stubborn, obstinate

Conclusive ::: [final, decisive], debatable, incomplete, doubtful

Amusing :: [delightful, joyful] displeasing, distasteful

Imaginary :: [chimeric, fanciful] real , true, factual, genuine

Damage :: [harm, detriment, affliction] remedy, healing,

Virtue [excellence, grace, cardinal] defect, blemish, flaw

Victory :: [triumph, palm] defeat, flop, failure, debacle

Unwarranted :: [needless, dispensable] crucial, vital, important,

Eradicate [annihilate, abolish, demolish] conserve, preserved

Lucidity [clarity, explicitness], ambiguous, equivocal

Tiresome [dreary, arid, boring] amazing, awesome, fabulous

Obscure [ambiguous, cryptic, arcane] comprehensible, fathomable

Meek,

Enigmatic,

Authorize,

Impairment,

Fulsome,

Ghastly,

Gruesome,

pensive,

Spurious,

Analytical Reasoning.

In order to gain full course credit for his tour of foreign city. Zeesha must visit exactly seven famous places of interest i.e. foreign office, a river, the hill, a library, a mosque , a club, and theater.

Any tour plan that zeeshan devises will allow him to keep tohis timetable and is this acceptable, except that he must plan his tour to conform to the following conditions:

The foreign office must of the first three places visited,

The hill must be visited immediately before the river,

Library can be neither first nor last visited place,

Mosque should be either first or the last visited place,

Club must be one of the last three places visited.

Plan visit.