

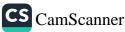
= Hence, the man is 10km for from his starting point (part b) Let's denote the pocket money as forlows: 1- Hassan (H) IL ALI (A) III- Akbar (R) W- Masir (N) V- Shahbaz (S) liven $I_{-} H = \frac{1}{3}(A)$ $I_{-}A = 5(R)$ 111 R = 3N 1V_ S= N+A V_ H+A+R+N+S = 8000 Substituting values; the total sum equation becomes. =) $\frac{1}{3}(A) + 3A + A + A + \frac{1}{5} + \frac{1}{15} + \frac{16A}{15} = 8000$ let Common demominator be 15 and simplifying => 5A+ 15A+ 3A+ A + 16A - 2000 =>(15)(5A+15A+3A+A+16A) = 8000(15)40 A = 8000 => 40 A = 8000 × 15 15 = A = 8000 x15 => A = 3000, 40 => Now, finding value for each: H= 1 (A) = 2 (3000) = 1000 Rs.



3xN = 3x 200 Ac BR = 600 $N = A = \frac{8000}{15} = 200 Rs$ S= 16A 15 16 (3000) - 35 S= 8200 Hence, the pocket money dishibition Hassan 1000 RS Ali 3000 Re Akbas = 600 RS. 200 RS Masir Shak bazz 3200 RS, (partc) Given: Sphere of radius = 7m. Surface corea (A) of sphere Solution : $A = 4\pi r^2$ 3 V = Nolume of sphere Tr then Since 1=7m N= 47(7) A = 47 (7 47 4 x 16× ~ 616 m2 616 m 2 372 V ~1436m3 part d butting Rs. 4320 among Zains Aslam, and b in ratio of 2: 3:7 2x, 3x and 7x be amounts recieve Ashra Zain, Aslam and Ashrap, respectively Then the total sum is:



2x+ 3x+ 7x = lax = 4320 => \$2000.12x = 4320 76.=4320 = 360 12 x= 360 has, a(360) 720Rs 22 Zain : 2 1080 Rs 3(360) slam: 3% shrah: 7x 2320 Rs 7 (360) (Question7) (part a) Given: Radius of Cylinder = 4 = 30cm Height of Cylinder = h = 1m Height of Cylindes volume of cylinder = v=? Topin Solution Tr2 V= = $\pi (30)^2(1) \, cm \times m$ = 3:14159 × 900 × 0 ·: h= 1 m ·: T= 3.11 5 II \$000 = 3.14159 × 900 × 50 cm 2 ·3 1°čm N= 282743, cm 3 (partb) 3x, Jour is 15 year Finding the age Jourgest 52 72 The averge 80. 3x+ 5x++x = 15 => 15x = 15 => 5x = Hence, age of youngest boy 330= is 21 3) age = 9 years



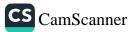
part c) Identifying the series: 819 52, 151, 447 Given is increasing battern number, as other O ratio gradually while 19 no in this Should likely \$ ne. C number that Bit 9 smother a exponentie or multiplicature increase. 11_11, 13, 17, 19,23 Series is a sequence of p ment prime nomber parta)) triangle: 5 cm, 4 cm, 6 cm is each angle of each. Side tox this are using Cosine sule cosine rule = $c^2 = a^2 + b^2 - 2ab$ CO3 (C) where a = 5, b=4, d c=6 > Solving for angle opposite to 6cm side: $6^2 = 5^2 + 4^2 - 2(5)(4)$ · · · cos(c) Cos(C)Casie $\rightarrow \cos(c) = 1 \Rightarrow c = \cos(1)$ => C = 82.82 -> Solving for other ongly using similar method.



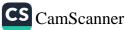
For angle apposite to 5cm side: $\cos(A) = \frac{4^{2} + 6^{2} - 5^{2}}{2 \times 4 \times 6}$ 96+ 31 48:11 $Correction = >A = Cos^{-1} \left(\frac{9}{16} \right) = 7 A = 56 - 25$ 16 Similarly the third ang B = 180 - 82.82 - 56 25 = 40.93 So, appromitaling T, angles one: A= \$6.25 B= 40.93 C= 82.82 (Question 4) (parta) Bile: Bile is a digestive fluid produced by liver and stored in the gall bladder. It plays a crucial role in the digestion of fats in small intestine. Components: O Bile contains bile acids, which are and critical for emolsifying fats and aiding in their absorption by forming micelles. It also contains bilipubin, a byproduct of the breakdown of hims globin and cholesperol Functions The presence of hile is intestine helps neutratise Stomach acids and provides an optimal PH for the action of pancreated en zymes.



Role of Kickney in Excretion :excretory system hidneys are essential hickneys are enound blood to remove was responsible for filtering blood to remove was a substances, which are Organ in then urine. The Adordiagrams excreted as the hidneys include: i-Filteration: Blood enters the lidneys through orteries and is altered in the g rend glo meruli ducis and ions are where waste pri removed 11- Reabcorption: Essential metric to vater are readsorbed into bloodsty ili- Secretion: Additional waster water and ions are secreted into the tubales for excretion. - Regulation ; Lyte balance and acid-base balance Hermone Production: They produce hormones such as cough ropoient fimulates red blood cell production venin (regulates blood pressure bart c Different methods of Solid Waste management: 1- Landfills: Maste is burnied in large sites. Modern larchills are designed to minimize entronmental impact by living them with potective layers and manging leachate and methanic emissions



11_ Inperation: Waste is buried at high temperature, reducing its volume and generating energy. This method however, can release pollulants unless properly managed. Materials such as paper, plastie, glass and metals are 111 - Recycling: processed and sequeed. Recycling reduces the need for raw materials and accreases waste iv_ composting. Osganic waste is decomposed by microoranisms to a natura produe compost, which can be used fertilizer N-Ana erobic Digestion: baclerie in waste is broke down by die 1 + 2 pro du Ozganie energy) and digstate (used as vi-Wasto-to-Energy (WZE): This energy biogas Cusedfor This energy converts non-recyclable waste forms of energy, such as electricity heat or fiel Bio logical Treatement (MBT) vii- Mechanical Waste is mechanically sorted and biologically treated to recover materials and reduce. of waste sent to landfills. (bart o i. Amaemia: A condition in which there is a deficiency red blood cells or hemo glebin in the I to reduced ongen fransport and comptions such a fatigue, weak lood. causing mptoms such s f shortness of breath. Symptoms hiers ii- Appendicitis: Inflammation of appendix, a small pouch



attached to the large intestine symptoms nichde abdominal pain, nousea and fever. It often requires Sugical removal of the appendix. III_ Spleen: An organ located in the upper left part of the abdomen sesponsible for filtering blood, recycling old red in the blood cells, storing wBC and immune response r- Myopia: Also known as mon-sightedness, it is a common vision contion where ose object ose objects appear dear by distant objects are of 5 lig This occurs when the eye shape cause to bend incorrectly focusing images is ef the veting. Isotones: Atoms tof different elements that have the same number of neutrons but different numbers of protons for example, carbon-14 and nitrogen-15 both have 7 new trons. Question 3 (parta) toms form chemical bords to achieve a more table electron configuration. Most atoms are more be when they have a full outer electron shell, after achieved by gaining losing or sharing electron to satisfy the actation in a Land greater stabilit Quater molecule (Ha), the in loves energy the oxygen for forme covalent bonds with two hydrogen ach hiptrogen atom shares one electron with Grygen atom, and the onygen atom shares



one electron with each hydrogen atom. This sharing electrons allows each achieve hydrogen atoms full outer shall be (with electrons, which full shell for hydrogen and the onyo 8 ele rou out shell achieve a full Cwith a molecule where the ment atoms regult is by shared pairs of electrons together. held Amown as covalent bonds part b) oping reports to the intentional introduction of into a pure semiconductor to modify its properties. By adding atoms of anoth electrica dopants), the mumber of charge electrons or hales) in the simiconstruction Carriers. be increased thus enhancing its conduc Cen -tivily. Ceramics: ypes of i' Traditional Ceramics: - These are made from now materials like clay and include products as bricks, pottery and titles. They are characterized by their brittleness thermal stability Ceramics;ii- Advanced Also known as technical, engineered pespormance ceramics, these are made from highly purified and refinad new materials. Examples include alimita (Al2O3) silicon carbide (SiC), and zironia (2rO2). The . They are used in applications mat Nequine with high wear sesistance hermal stability and chemical inerteness such as in electronics, medical devices and aerospace components

