General Knowledge Sample Paper - 11

SECTION-III : GENERAL TEST

- 1. The capital of Yadava Kings was:
 - (a) Devagiri
 - (b) Varanasi
 - (c) Kanchipuram
 - (d) Krishnagiri
- 2. Which Governor General was called as the 'Father of Local Self-Government' in India?
 - (a) Lord Wellesley
 - (b) Lord Canning
 - (c) Lord William Bentinck
 - (d) Lord Ripon
- 3. Which of the following is formed out of volcanic eruptions in India?
 - (a) Deccan Plateau
 - (b) Lakshadweep Islands
 - (c) Western Ghats
 - (d) Himalayas
- 4. The Ability Principle of Taxation is given by:
 - (a) Adam Smith
 - (b) Edgeworth
 - (c) Joan Robinson
 - (d) J. S. Mill
- 5. 'World Economic Report' is published by:
 - (a) World Bank (b) UNDP
 - (c) IMF (d) UNCTAD
- 6. Article 368 of the Indian Constitution deals with:
 - (a) Emergency Provisions
 - (b) Right to Primary Education
 - (c) Right to Information
 - (d) Amending Procedure
- 7. The highest concentration of urea is found in:
 - (a) Hepatic portal vein
 - (b) Dorsal aorta
 - (c) Hepatic vein
 - (d) Renal vein

- 8. Terrigenous deposits are found
 - in:(a) Deep Sea Plain
 - (b) Ocean Trenches
 - (c) Rift Valley
- (d) Continental Shelf and Slope
- 9. Which of the following is the only volcanic peak in Antarctica?
 - (a) Mt. Blanc
 - (b) Mt. Erebus
 - (c) Mt. Elbrus
 - (d) Mt. Cook
- 10. Heavy water is:
 - (a) Deuterium
 - (b) Rain water
 - (c) Tritium oxide
 - (d) Deuterium oxide
- 11. Infrared radiations are detected
 - by:
 - (a) Pyrometer
 - (b) Nanometer
 - (c) Photometer
 - (d) Spectrometer
- 12. Beta-rays emitted by a radioactive material are:
 - (a) The electrons orbiting around the nucleus
 - (b) Charged particles emitted by nucleus
 - (c) Neutral particles
 - (d) Electromagnetic radiations
- 13. Which of the following computer memories is non-volatile?
 - (a) DRAM (b) SRAM
 - (c) ROM (d) RAM
- 14. In present day computing, which code is used and is accepted worldwide?
 - (a) ASCII
- (b) Hollerith Code
- (c) EBCDIC
- (d) ISCII

- 15. The inert gas which is substituted for nitrogen in the air used by deep sea divers for breathing, is:
 - (a) Xenon (b) Krypton
 - (c) Argon (d) Helium
- 16. Which of the following is called the 'land of one thousand lakes'?(a) Sweden (b) Greenland
 - a) Sweden (b) Greenian
 - (c) U.S.A. (d) Finland
- 17. Which one of the following vegetable oils is used in the manufacture of paints?
 - (a) Palm oil
 - (b) Sunflower oil
 - (c) Linseed oil
 - (d) Cottonseed oil
- 18. Acid rain is caused by the pollution of environment by :
 - (a) Carbon monoxide and Carbon dioxide
 - (b) Ozone and Carbon dioxide
 - (c) Nitrous oxide and Sulphur dioxide
 - (d) Carbon dioxide and Nitrogen
- 19. The novel 'When the River Sleeps' is written by:
 - (a) Anuradha Roy
 - (b) Vikram Seth
 - (c) Shobhaa De
 - (d) Easterine Kire
- 20. 'Entomol ogy' is the science that studies:
 - (a) Behaviour of human beings
 - (b) Formation of rocks
 - (c) Insects

(c) 4

- (d) None of these
- 21. Which country uses the 'Birr' as its currency?
 - (a) Ethiopia (b) Togo
 - (c) Eritrea (d) Estonia
- 22. How many Nobel Prize Awards are awarded each year?

(d) 6

(a) 5 (b) 7

23.	We	llington Troph	ny is associated		
	with:				
	(a) Rowing				
	(b)	Chess			
	(c)	Hockey			
	(d)	Bridge			
24.	Wo	rld Autism Av	wareness Day is		
	observed on:				
	(a)	2nd April			
	(b)	3rd April			
	(c)	5th April			
	(d)	1st April			
25.	Wh	o invented the	e 'World Wide		
	We	b'?			
	(a)	Tim Berners-	Lee		
	(b)	Martin Coope	er		
	(c)	R. Samuel To	mlinson		
	(d)	Charles Babb			
р.	(u)				
Direc	211011	is (Q.26-34): C	hoose the related		
word	/lett	ers/number fro	om the given		
		es.	unia i 9		
20.	Car	Auioru	urio: ((b) Caller		
	(a)	Avialy	(d) Granary		
27	AR	$CD \cdot HYXE \cdot$	\cdot MNOP \cdot ?		
27.	(a)	TKIO	(b) TLJO		
	(u) (c)	ТКОЈ	(d) TLOJ		
28.	IKN	MO : PRTV : :	RTVX:?		
	(a)	YACE	(b) YAEC		
	(c)	XACE	(d) XCAE		
29.	524	3:14::4312	2:?		
	(a)	10	(b) 9		
	(c)	7	(d) 6		
Direc	ction	is (Q. 30-33):	Choose the odd		
word/letters/number/number pair from					
the g	iven	alternatives.			
30.	(a)	Dehradun	(b) Ranchi		
21	(c)	CELU	(d) Koorkee		
51.	(a)	DTWV	(0) HJMO $(d) POTV$		
32	(\mathbf{c})	583	(u) $PQ1V$ (b) 275		
52.	(a)	286	(d) 4273		
33	(c) (a)	242	(b) 431		
55.	(c)	260	(d) 531		
Direc	ction	is (Q.34-35):	A series is given		
with one term missing. Choose the					
correct alternative from the given ones					
that v	vill (complete the s	eries.		
34.	AC	E, BDF, CEG	,?		

(a) DEF

(c) DEH

(b) DFH

(d) DFE

(c) 2600 (d) 2610 36. Five planes, A, B, P, O and R were saluting on Independence Day in such a way that R was second to the left of Q but to the immediate right of A. There was one plane between B and P. B was not at any of the ends. P and Q were neighbours. Who was at the left end? (a) A (b) B (d) O (c) R 37. Arrange the given words in the sequence in which they occur in the dictionary. Prandial ii. Preach i. iv. Price iii. Priam v. Pseudo (a) iii, iv, v, i, ii (b) i, v, iv, ii, iii (c) i, ii, iii, iv, v (d) v, iii, iv, i, ii38. In a certain coded language, "DURING" is written as "GRUFQD". How is "PICKED" written in that coded language? (a) SAFFIIA (b) TGFHHA (c) SFFHHA (d) SFHFHA 39. In the following question, select the missing number from the given series. 16 9 25

35. 130, 450, 970, 1690, ?

(b) 2601

(a) 6210

- 2536 (a) 47 (b) 49 (c) 50 (d) 57
- 40. If "×" stands for addition, "<" stands for subtraction, "+" stands for division, ">" stands for multiplication, "-" stands for equals to, "÷" stands for greater than and "=" stands for less than, which of the following holds true? (a) 18 + 9 = 128 > 2
 - (b) $16 + 9 \times 8 < 2 14$
 - (c) $8 \times 12 + 3 14 \times 2$
 - (d) $182 + 6 > 4 \div 1218$
- 41. In the following question, which one set of letters when sequentially placed at the gaps in the given letter series sha ll complete it? _n_p_no_m_ _p

- (a) mmoopp (b) mommpo
- (c) mompon (d) mompno
- 42. A man travels 10 km towards west, then he takes a turn towards north east and travels 20 km in the direction. He again takes a turn towards south east and covers 5 km. Taking starting point as the origin, in which direction is he now?
 - (a) North-east (b) South-east (c) South (d) East
- 43. Pointing to a lady, Anju says, "She is the sister of my brother's mother". How is the lady related to Anju?
 - (a) Mother in law
 - (b) Niece
 - (c) Aunt
 - (d) Sister
- 44. If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure? Question figur e:



Answer figures:



45. Identify the diagram that best represents the relationship among the given classes.

> Prime Minister, Chief Minister, Governor. State





46. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when unfolded.

Questions figure:



Answer figures:









47. In the following figure, square represents Pharmacists, triangle represents Singers, circle represents Surgeons and rectangle represents Mothers. Which set of letters represents surgeons who are either mothers or singers?



(a) E, D, G	(b) A, F, C
(c) A, D, C	(d) H, B, C

48. Which answer figure will complete the pattern in the question figure?

Question figure:







49. Three positions of a cube are shown below. What will come opposite to the face containing '5'?



50. A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-l are numbered from 0 to 4 and that of Matrix-Il are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column for example, 'V' can be represented by 21, 33, etc. and 'I' can be represented by 75.97, etc. Similarly, you have to identify the set for the word'WHALE'.

Matrix-1

	0	1	2	3	4
0	U	W	V	A	L
1	Α	U	W	L	V
2	L	V	U	W	A
3	U	А	L	V	W
4	W	U	V	Α	L

Matrix-ll

	5	6	7	8	9
5	Е	Η	U	Ι	V
6	V	U	Η	Е	Ι
7	Ι	E	U	Η	V
8	U	Ι	E	V	Η
9	Η	V	Ι	U	E
22 5 10 12 50					

- (a) 23, 56, 10, 43, 68
- (b) 34, 67, 24, 04, 55
- (c) 40, 76, 03, 44, 99
- (d) 01, 78, 31, 34, 76
- 51. In a class of 60 students, there are 30 girls. The average weight of these girls is 58 kg and average weight of the full class is 63 kgs. What is the average weight of the boys of the class?

(c) 68 (d) 65

- 52. Two students appeared for an examination. One of them secured 21 marks more than the other and his marks were 80% of the sum of their marks. The marks obtained by them are
 (a) 88 and 67 (b) 89 and 68
 - (c) 28 and 7 (d) 98 and 77
- 53. Pannalal has done 1/3rd of a job in 20 days. Saiprasad completes the rest of the job in 10 days. In how many days can they together do the job?
 - (a) 12 days (b) 6 days
 - (c) 3 days (d) 24 days
- 54. If Giridhar's salary is 5/3 times of Hariraj's salary and Shaunak's salary is 2/3 times of Hariraj's salary, what is the ratio of Giridhar's salary to Shaunak's?
 (a) 9:10 (b) 10:9
 (c) 5:2 (d) 2:5

- 55. If a cylinder of radius 4 cm and height 8 cm is melted and constructed into a cone of the same radius, what will be the height of this cone? (a) 48 cm (b) 24 cm (c) 8 cm (d) 12 cm 56. What is the measure of an interior angle of a regular decagon? (a) 120° (b) 140° (c) 144° (d) 150° 57. The circumference of a circle is 88 cm. Find its area. (a) 616 sq cm (b) 308 sq cm (c) 154 sq cm (d) 77 sq cm 58. At 15% discount the selling price of a microwave oven is ₹ 34000. What is the selling price if the discount is 37.5%? (a) ₹25000 (b) ₹ 15625 (c) ₹17968.75 (d) ₹29218.75 59. At what rate of compound interest per annum will a sum of ₹ 10000 become ₹ 12321 in 2 years? (a) 22% (b) 11% (c) 7% (d) 15% 60. If x - y = -9 and xy = -20, then find $x^2 + y^2$. (a) 61 (b) 41 (d) 113 (c) 85 61. Two cars travel from city A to city B at speeds of 36km/hr and 54 km/ hr, respectively. If one car takes 3.5 hours lesser time than the other car for the journey, then the distance between City A and City B is : (a) 454 km (b) 567 km (c) 302 km (d) 378 km 62. Product of digits of a 2-digit number is 72. If we add 9 to the number, the new number obtained is a number formed by interchange of the digits. Find the number. (a) 98 (b) 89 (d) 87 (c) 78 63. An amount fetched a total simple interest of ₹ 3200 at the rate of 6.25% per year in 4 years. What is the amount (in $\mathbf{\overline{\xi}}$)? (a) 13800 (b) 11800 (c) 12800 (d) 14800
- 64. A boat goes a certain distance at 30 km/hr and com es back the same distance at 60 km/hr. What is the average speed (in km/hr) for the total journey? (a) 45 (b) 50 (c) 40 (d) 35 65. A number is increased by 84. it becomes 107% of itself. What is the number? (a) 600 (b) 900 (c) 1500 (d) 1200 66. A wholesaler sells a jacket to a retailer at a profit of 5% and the retailer sells it to a customer at a profit of 10%. If the customer pays ₹ 4158, what had it cost (in $\mathbf{\overline{t}}$) to the wholesaler? (a) 3500 (b) 3400 (c) 3300 (d) 3600 67. The average marks of 40 students in an examination was 25. It was later found that the marks of one student had been wrongly entered as 73 instead of 37. What is the value of correct average? (a) 24.3 (b) 24.1 (c) 24.5 (d) 24.7 68. The ratio of present ages of R and S is 11 : 17. 11 years ago the ratio of their ages was 11:20. What is R's present age (in years)? (a) 51 (b) 33 (d) 40(c) 22 69. If two T-shirts are offered free on purchase of five T-shirts, what is the effective discount (in %) on each T-shirt? (a) 40 (b) 20 (c) 30 (d) 50 70. What is the area (in sq. cm.) of a regular hexagon of side 14 cm? $(a)_{147\sqrt{5}}$ (b) $441\sqrt{3}$ $(c)_{196\sqrt{3}}$ (d) $294\sqrt{3}$ 71. M is thrice as good a workman as N and together they finish a piece of work in 30 days. In how many days will M alone finish

the work?

(a)	50		(b) 40
(c)	60		(d) 45
33.71	. 1	1	. 1

72. What least number must be subtracted from 3401, so that the sum is completely divisible by 11?
(a) 3 (b) 1
(c) 2 (d) 0

Directions (Q. 73-75): Students from six different countries (A, B, C, D, E, F) participated in a certain seminar. The pie-chart shows how many students came from each of the six participating countries. Study the diagram and answer the following questions.



73. The biggest contingent of students was from which country?

(a) A	(b) C
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(c) B (d) D

74. What is the angular measure (in degress) of the sector representing country A?(a) 100 (b) 25

(c) 50 (d) 120

75. By what count (in %) were students from country B at the seminar more than the students from country E?

		-	
(a)	40		(b) 200

(c) 20 (d) 18

SECTION-III : GENERAL TEST

1. (a) Devagiri (modern day Daulatabad in Maharashtra) was the capital of the Yadavas. It was built by first Yadava king Bhilan in 1187 A.D. The Yadavas of Devagiri were the descendants of the feudatory nobles of the Western Chalukyan (Chalukyas of Kalyani) Empire.

2. (d) Lord Ripon is known as the 'Father of Local Self Government' in India. In his famous resolution on local selfgovernment on May 18, 1882, Ripon recognised the twin considerations of local government: (i) administrative efficiency and (ii) political education.

3. (a) The Deccan Plateau is made up of lava flows or igneous rocks known as the Deccan Traps. The rocks are spread over the whole of Maharashtra and parts of Gujarat and Madhya Pradesh, thereby making it one of the largest volcanic provinces in the world. The Deccan traps formed between 60 and 68 million years ago at the end of the cretaceous period.

4. (a) The 'Ability-to-Pay' principle of Taxation is one of the canons of taxation proposed by Adam Smith in his 'Wealth of Nations'. It is a progressive taxation principle that maintains that taxes should be levied according to taxpayer's ability to pay.

5. (c) The World Economic Outlook (WEO) is a survey conducted and published by the International Monetary Fund (IMF). It is published bi-annually and partly updated two times a year. It portrays the world economy in the near and medium context, with projections for up to four years into the future.

6. (d) Article 368 of the Constitution of India deals with the amendment process. It empowers Parliament to amend the Con stitution by way of addition, variation or repeal of any provision according to the procedure laid down therein, which is different from the procedure for ordinary legislation. 7. (c) The liver produces urea and other waste materials and then it pours it all in the right ventricle of the heart for oxygenation. The heart then distributes the blood to various parts of the body. So the impure blood brought by the hepatic vein and other blood vessels gets distributed through the aorta. This clearly indicates that hepatic vein carries the largest amount of urea, while the renal vein carries the least.

8. (d) In oceanography, terrigenous sediments are those derived from the erosion of rocks on land; that is, they are derived from terrestrial (as opposed to marine) environments. Consisting of sand, mud, and silt carried to sea by rivers, they are mainly depposited on the continental shelf and slopes.

9. (b) Mount Erebus is the second highest volcano in Antarctica (after Mount Sidley) and the southernmost active volcano of earth.

10. (d) Heavy water is deuterium oxide (D_2O) . It is a form of water that contains a larger than normal amount of the hydrogen isotope deuterium (2H o r D, also known as heavy hydrogen), rather than the common hydrogen-1 isotope (1H or H, also called protium) that makes up most of the hydrogen in normal water.

11. (c) A photometer is an instrument that can be used for absorption, emission or fluorescence measurement with ultraviolet, visible or infrared radiation. It has filters for wave-length selection and a photoelectric device for measuring radiation.

12. (b) A beta-ray is a high-energy, high-speed electron (negativelycharged) or positron (positively charged) emitted in the radioactive decay of an atomic nucleus, such as a potassium-40 nucleus, in the process of beta decay. Two forms of beta decay, β - and β +, respectively produce electrons and positrons. Beta radiation takes the form of either an electron or a positron being emitted from the nucleus of an atom. 13. (c) Read-only memory (ROM) is a form of data storage in computers and other electronic devices that is nonvolatile. Its contents are retained even when the device is powered off. Other examples of non-volatile memory include flash memory, ferroelectric RAM (F-RAM), hard disk drives, floppy disks, etc.

14. (a) American Standard Code for Information Interchange (ASCII) is the predominant character set encoding of present-day computers. ASCII codes represent text in computers, telecommuni-cations equipment, and other devices. Most modern characterencoding schemes are based on ASCII, although they support many additional characters.

15. (d) Trimix is a breathing gas, consisting of oxygen, helium and nitrogen and is often used in deep commercial diving. The helium is included as a substitute for some of the nitrogen, to reduce the narcotic effect of the breathing gas at depth. It helps to reduce nitrogen narcosis and to avoid the dangers of oxygen toxicity. With a mixture of three gases, it is possible to create mixes suitable for different depths or purposes by adjusting the proportions of each gas.

16. (d) Finland is often referred to as "the land of the thousand lakes." This is because the lake and rivers account for around 10 percent of the country's land. There are nearly 200,000 more lakes in relation to a country's size than any other. Finland has one lake for every 26 people.

17. (c) Linseed oil and castor oil are used mainly as drying agents in paints and varnishes. Linseed oil is generally used in the manufacture of oil paints, drying oil finish or varnish in wood finishing, as a pigment binder in oil paints, as a plasticizer and in the manufacture of linoleum.

18. (c) Acid rain is caused by a chemical reaction that begins when compound like sulphur dioxide and nitrogen oxides are released into the air. These substances can rise very high into the atmosphere, where they mix and react with water, oxygen and other chemicals to form more acidic pollutants, known as acid rain. Human activities are the main be accessed via the Internet. cause of acid rain.

19. (d) 'When the River Sleeps' is a novel by Easterine Kire. It won The Hindu Prize for Best Fiction 2015. First published by Zubaan in 2014, the novel is about the lives and hearts of the people of Nagaland : their rituals and beliefs, their reverence for the lands, their closeknit communities with their natural surroundings.

20. (c) Entomology is the scientific study of insects, a branch at branch of zoology. Like several of the other fields that are categorized within zoology, entomology is a taxon-based category. At some 1.3 million described species, insects account for more than two-thirds of all known organisms.

21. (a) Birr is the unit of currency in Ethiopia. Before 1976, dollar was the official English translation of Birr. Today, it is officially birr in English as well.

22. (d) The Nobel Prizes are given every year for outstanding contributions in six fieldschemistry, economics, literature, peace, physics or physiology and medicine. The prizes in Chemistry, Literature, Peace, Physics or Physiology and Medicine were first awarded in 1901. The related Nobel Memorial Prize in Economics Sciences was established in 1968.

23. (a) Wellington trophy is associated with rowing. Rowing or boat racing is based on propelling a boat (racing shell) on water using oars. By pushing against the water with an oar, a force is generated to move the boat.

24. (a) World Autism Awareness Day is an internationally recognised day on 2nd of April every year. It is one of only four official health-specific UN days. The first Autism Awareness Day was observed on 2 April, 2008.

25. (a) World Wide Web (www) was invented by English scientist Tim Berners-Lee in 1989. It is an information space where documents and other web resources are identified by URLs, interlinked by hypertext links, and can

26. (c) As Car is related to Garage, similarly, Curio is related to Museum. 27. (a) As



Similarly,



Finally the missing term is TKJQ. 28. (a) As



Finally, the missing term is YACE. 29. (a) As

5243 = 5 + 2 + 4 + 3 = 14Similarly

4312 = 4 + 3 + 1 + 2 = 10

Finally, the missing number is 10. 30. (d) Dehradun, Ranchi and Lucknow are the capitals of different states and Roorkee is the city of Uttarakhand.

So, finally Roorkee is the odd word. 31. (d)



Similarly,



Finally 'PICKED' will written as 'SFFHHA'.

39. (b) As $(1)^2 \longrightarrow (3)^2 \longrightarrow (5)^2$ $1 \longrightarrow 9 \longrightarrow 25$ and $(2)^{2} \longrightarrow (4)^{2} \longrightarrow (6)^{2}$ $4 \longrightarrow 16 \longrightarrow 36$ Similarly $(3)^2 \longrightarrow (5)^2 \longrightarrow (7)^2$ $9 \longrightarrow 25 \longrightarrow 49$ Finally, the missing term is 49. 40. (a) From option (a): 18 + 9 = 128 > 2 \Rightarrow 18 ÷ 9 < 128 × 2 $\Rightarrow 9 < 256$ Finally, this equation is true. 41. (d) The series is: mnop/mnop/mnop The series becomes mnop mnop mnop Finally the set of letters, mompno will

complete the series.





Finally, the man is in the south-east direction from the starting point.





Finally, the lady is the aunt of Anju. 44. (a)



Finally, the right mirror image of the given image is



45. (a) A state contains governor and chief minister and a country contains a prime minister. So, we can represent the relationship among them a given below :



Chief Minister 46. (a) A piece of paper is folded and punched. When unfolded it will appear as given below:



47. (b) Surgeons who are either mothers or singers can be represented by the regions common to circle and triangle as well as circle and rectangle. Such regions have been marked as A, F and C.

48. (b) Answer figure (b) will complete the pattern of the question figure.

49. (b) The numbers 2, 3, 4 and 6 lie on the faces adjacent to the number '1'. Therefore, '5' lies opposite 1'.

50. (b)

$$W = 01, 12, 23, 34, 40$$

H = 56, 67), 78, 89, 95 A = 03, 10(24), 31, 46 L = (04), 13, 20, 32, 44 E = (55), 68, 76, 87, 99 For 'WHALE', the set of numbers is 34, 67, 24, 04, 55. 51. (c) Total weight of 30 girls = $58 \times$ 30 = 1740 kgTotal weight of 60 students = 63×60 = 3780 kgTotal weight of 30 boys = (3780 -1740) = 2040 kgAverage weight of boys = 30 = 68 kg52. (c) Let one student get x marks Another gets (x + 21) marks According to the question: 80

$$x + 21 = \frac{30}{100}(x + x + 21)$$
$$x + 21 = \frac{4}{5}(2x + 21)$$
$$5x + 105 = 8x + 84$$
$$3x = 105 - 84 = 21$$
$$x = \frac{21}{2} = 7$$

Marks of another student = 21+7 = 28Hence, their marks are 28 and 7. 53.(a) Pannalal completed $\frac{1}{3}$ job in = 20 days Whole job he will complete in = $3 \times 20 = 60$ days In 1 day, Pannalal completed = $\frac{1}{60}$ Left work = $\left(1-\frac{1}{3}\right)=\frac{2}{3}$ $\frac{2}{3}$ job is completed by Saiprasad in 10 days Whole job is completed in = $10 \times \frac{3}{2} = 15$ days In one day, Saiprasad will complete Both will do in 1 day = $\frac{1}{60} + \frac{1}{15} =$ $\frac{1+4}{60} = \frac{5}{60} = \frac{1}{12}$ work Time taken by both to complete whole work = $\frac{1}{1/12} = 12$ days. 54. (c) According to the question: Let Hariraj's salary bex Girdhari's salary = $\frac{5}{3}$ of Hariraj's $= \frac{5}{3}x$ (i) Shaunak's salary = $\frac{2}{3}$ Hariraj's salary $= \frac{2}{3}x$ (ii)

Ratio of Girdhari's salary to Shaunak's salary

 $=\frac{5}{3}x:\frac{2}{3}x=5:2$

55. (b) Volume of cone = Volume of cylinder

$$\frac{1}{3}\pi r^{2}h = \pi r^{2}H$$

[:: radius of cone and cylinder is same]

 $\therefore \quad h = 3H = 3 \times 8 = 24$

Hence, the height of cone is 24 cm. 56. (c) Interior angle of a regular decagon

$$= \frac{(2n-4) \times 90^{\circ}}{n}.$$

$$= \frac{(2 \times 10-4) \times 90^{\circ}}{10} = 16 \times 9 = 144^{\circ}$$
57. (a)
$$C = 2\pi r$$

$$\Rightarrow \qquad 88 = 2 \times \frac{22}{7}.r$$

$$\Rightarrow \qquad r = \frac{88 \times 7}{44} = 14 \text{ cm}$$

$$\therefore \text{ Area of circle} = \frac{22}{7} \times 14 \times 14$$

$$= 44 \times 14 = 616 \text{ sq. cm}$$
58. (a)
Let M.P. bex

SP = (100 - 15)% = 85%

Than $\Rightarrow \frac{85 \text{ x}}{100} = 34000$ $x = \frac{34000 \times 100}{85}$ ⇒ $=\frac{34000\times20}{17}$ = 2000 × 20 ₹ 40000 $SP = \frac{(100 - 37.5)}{100} \times 40000$ $= 62.5 \times 400$ =₹25,000 59. (b) CI = (A - P) = (12321 - 1000)₹2321 $\mathbf{A} = \mathbf{P} \left(1 + \frac{\mathbf{r}}{100} \right)^{n}$ \Rightarrow $\Rightarrow \quad \frac{12321}{10000} = \left(1 + \frac{r}{100}\right)^2$ $\Rightarrow \left(\frac{111}{100}\right)^2 = \left(1 + \frac{r}{100}\right)^2$ $\Rightarrow \frac{111}{100} - 1 = \frac{r}{100}$ $\Rightarrow \frac{11}{10} \times 100 = r$ · . . r = 11% 60. (b) x - y = -9, xy = -20Squaring on both sides: $(x-y)^2 = (-9)^2$ \Rightarrow $x^2 + y^2 - 2xy = 81$ \Rightarrow $\Rightarrow x^2 + y^2 - 2(-20) = 81$ $x^2 + y^2 + 40 = 81$ \Rightarrow $x^2 + y^2 = 81 - 40 = 41$ ·.. 61. (d) Let the time taken by first car be t hours. Time taken by another car = (-3.5)hours. $Distance = Speed \times Time$ But distance will be same in both the cases. Then. 54(t-3.5) = 36 $(54 - 36) = 54 \times 3.5$ $t = \frac{54 \times 3.5}{18} = 3 \times 3.5 = 10.5$

Distance = $36 = 36 \times 10.5$ $= 36 \times \frac{21}{2} = 18 \times 21 = 378$ km 62. (b) Let the number be 10x + ywhere x and y are digits, In case – I xy = 72...(i) In case - II 10x + y + 9 = 10y + x9(x - y) = -9x - y = -1...(ii) On putting x = y - 1 in equation (i), we get: (y-1)y = 72 $y^2-y-72 = 0$ $y^2 - 9y + 84 - 72 = 0$ y(y-9) + 8y-9 = 0 \Rightarrow \Rightarrow (y-9)(y+8) = 0y = 9, or y = -8y = 9, x = 8 Hence, the number = $10 \times 8 + 9$ = 80 + 9 = 8963. (c) Principal = $\frac{\text{Interest} \times 100}{\text{Time} \times \text{Rate}}$ = $\frac{3200 \times 100}{4 \times 6.25}$ = ₹ 12800 64. (c) Average Speed $=\left(\frac{2xy}{x+y}\right)$ kmph. $=\left(\frac{2\times30\times60}{30+60}\right)$ kmph. $=\left(\frac{2\times30\times60}{90}\right)$ kmph = 40 kmph 65. (d) Let the number be x. According to the question: 7% of x = 84 $x \times \frac{7}{100} = 84$ \Rightarrow $x = \frac{8400}{7} = 1200$ \Rightarrow

66. (d) L et the C.P. for the wholesale dealer be $\mathbf{\overline{x}}$ x.

According to the question:

$$x \times \frac{105}{100} \times \frac{110}{100} = 4158$$

⇒ $x = \frac{4158 \times 10000}{105 \times 110} = ₹ 3600$

67. (b) Difference between incorrect and correct marks:

(37 - 73) = -36∴ Correct average = $(25 - \frac{36}{40})$ = $(25 - \frac{9}{10}) = (25 - 0.9) = 24.1$ 68. (b) R's present age = 11 x years

S's present age = 17x years

According to the question:

11 years ago:

$$\frac{11x - 11}{17x - 11} = \frac{11}{20}$$

$$\Rightarrow \qquad \frac{x - 1}{17x - 11} = \frac{1}{20}$$

$$\Rightarrow \qquad 20x - 20 = 17x - 11$$

$$\Rightarrow \qquad 20x - 17x = 20 - 11$$

$$\Rightarrow \qquad 3x = 9 \Rightarrow x = 3$$

 \therefore R's present age = $11 \times 3 = 33$ years 69. (a) Let the marked price of each

T-shirt = ₹ 100

According to the question:

Total marked price of five T-shirts =₹ 500

Total marked price of two

T-shirts = ₹ 200

: Discount on each T-shirt

$$=\frac{200}{500}$$
 × 100 = ₹ 40

70. (d) Area of a regular hexagon

$$= \frac{3\sqrt{3}}{2} \times \text{Side}^{2}$$

$$= \left(\frac{3\sqrt{3}}{2} \times 14 \times 14\right) \text{ sq. cm.}$$

$$= 294\sqrt{3} \text{ sq. cm.}$$
71. (b) Time taken by M = x days
(let).
 \therefore Time taken by N = 3x days
According to the question,
 $\frac{1}{x} + \frac{1}{3x} = \frac{1}{30}$
 $\Rightarrow \quad 3x = 30 \times 4$
 $\Rightarrow \quad x = \frac{30 \times 4}{3} = 40 \text{ days}$
 $= \text{Time taken by M}$
72. (c) 11) 3401 (309
 $\frac{33}{101}$
 $\frac{99}{2}$
Here, remainder = 2
 \therefore (3401 - 2) = 3399 which is
divisible by 11.
73. (c) A maximum of 30 students
came from country B.
74. (a) Total number of students
who came from 6 countries.
 $= 25 + 30 + 5 + 5 + 10 + 5 = 90$
 $\therefore \quad 25 = \frac{360^{\circ}}{90} \times 25 = 100^{\circ}$
75. (b) Required percentage
 $= \left(\frac{30 - 10}{10}\right) \times 100 = 200\%$