Hall Ticket Number:

Code No. : 13142 S

VASAVI COLLEGE OF ENGINEERING *(AUTONOMOUS)*, HYDERABAD
Accredited by NAAC with A++ Grade
B.E. III-Semester Supplementary Examinations, July-2022
Skill Development Course-II (Aptitude-I)
(Common to all branches)

Time: **2** hours

Max. Marks: **40**

Note: i) Answer ALL questions in Part-A and any FIVE from Part-B
ii) Calculators are not allowed

Part-A (5× 1 = 5 Marks)

Q.No.	Stem of the question	M	L	CO	PO
1.	What is the remainder when 4^{1000} is divided by 7? A. 6 B. 2 C. 4 D. 1 E. 3	1	3	1	12
2.	The average temperature of the town in the first four days of a month was 58 degrees. The average for the second, third, fourth and fifth days was 60 degrees. If the temperatures of the first and fifth days were in the ratio 7 : 8, then what is the temperature on the fifth day ? A. 62 degrees B. 64 degrees C. 65 degrees D. 66 degrees	1	3	2	12
3.	If the cost price of 12 pens is equal to the selling price of 8 pens, the gain percent is? A. 12% B. 30% C. 50% D. 60%	1	1	3	12
4.	Bunty is the father of Kamal. Bunty has only two children. Kamal is the brother of Rupesh. Rupesh is the daughter of Piyush. Anu is the granddaughter of Piyush. Soham is the father of Anu. How is Soham related to Kamal? A. Brother B. Son C. Son - in - law D. Brother - in – law	1	2	4	12
5.	10 women can complete a work in 7 days and 10 children take 14 days to complete the work. How many days will 5 women and 10 children take to complete the work? A. 3 B. 5 C. 7 D. Cannot be determined E. None of these	1	1	5	12
	Part-B (5 ×7 = 35 Marks)				
6. a)	i. $4^{61} + 4^{62} + 4^{63} + 4^{64}$ is divisible by : A. 10 B. 3 C. 11 D. 13 ii. Find the unit digit of expression $(424)^{111} \times (727)^{188} \times (828)^{199}$? A. 3 B. 4 C. 5 D. 8 iii. A number when divided successively by 4 and 5 leaves remainders 1 and 4 respectively. When it is successively divided by 5 and 4, then the respective remainders will be : A. 1, 2 B. 2, 3 C. 3, 2 D. 4, 1 E. None of these iv. Each member of a picnic party contributed twice as many rupees as the total number of members and the total collection was Rs.3042. The number of members present in the party was A. 2 B. 32 C. 39 D. 40	4 2 4 3	3	1	12

b)	i.	Four bells toll at intervals of 14, 21 and 42 min respectively. If they toll together at 11:22 AM, when will they toll for the first time after that? A. 11:56AM B. 12:04PM C. 12:06PM D. 11:48AM E. None of these	3	4	1	12
	ii.	1420! ends with _____ number of consecutive zeros A. 348 B. 353 C. 365 D. 384		2		
	iii.	The least number which when divided by 4, 6, 8, 12 and 16 leaves a remainder of 2 in each case is : A. 46 B. 48 C. 50 D. 56		2		
7. a)	i.	The average marks of boys in an NQT examination is 71 and the average marks of the girls is 73. If the average marks of the boys and girls together is 71.8, then what will be the ratio between the number of boys and the number of girls who appeared in the NQT examination? A. 1 : 2 B. 3 : 2 C. 2 : 3 D. 4 : 2 E. 5 : 3	4	4	2	12
	ii.	A sum of Rs.312 was divided among 100 boys and girls in such a way that the boy gets Rs.3.60 and each girl Rs. 2.40 the number of girls is A. 35 B. 40 C. 45 D. 50		3		
	iii.	Incomes of John and Kelvin are in the ratio 4 : 7 and their spending are in the ratio 6 : 11. If John saves one third of his income, then what will be the ratio of their savings. A. 12 : 13 B. 13 : 12 C. 18 : 19 D. 12 : 19 E. None of these		4		
	iv.	At present the ratio between the age of Ram and Karim is 2 : 3 and Ram and Sohan is 2 : 1. Five years hence, the sum of the ages of Ram, Karim and Sohan will be 75 years, then is the present age of Ram? A. 18 years B. 15 years C. 26 years D. 20 years E. None of these		3		
b)	i.	Three persons P, Q and R started a business investing Rs. 42,000, Rs. 30,000 and Rs. 28,000 respectively. After 4 months, P withdrew Rs. 12,000, Q withdrew Rs. 6,000 and R withdrew Rs. 8,000. If after 10 months, a profit of Rs. 31,650 is earned, then what is the share of R in the profit? A. Rs. 12,580 B. Rs. 13,160 C. Rs. 9,900 D. Rs. 12,540 E. Rs. 12,760	3	4	2	12
	ii.	In a bag, there are three types of coins — 1-rupee, 50 paise and 25-paise in the ratio of 3 : 8 : 20. Their total value is 372. The total number of coins is A. 1200 B. 961 C. 744 D. 612		3		
	iii.	A vessel contains 20% concentrated solution of sulphuric acid. If 50 ml more sulphuric acid is added in it, then concentration of sulphuric acid in the vessel becomes 36%. What is the volume of sulphuric acid in the original mixture in the vessel? A. 40 ml B. 45 ml C. 60 ml D. 50 ml E. None Of these		3		

8.	a)	i.	Arbind spends 75% of his income and saves the rest. His income is increased by 20% and he increases his expenditure by 10%. Then the increase in savings in percentage is A. 55% B. 52% 　　 C. 50% D. 48%	4	4	3	12
		ii.	75 gm of sugar solution has 30% sugar in it. Then the quantity of sugar that should be added to the solution to make the quantity of the sugar 70% in the solution, is: A. 125 gm 　 B. 100 gm 　 C. 120 gm 　 D. 130 gm		3		
		iii.	In an office, 40% of the staff is female. 70% of the female staff and 50% of the male staff are married. The percentage of the unmarried staff in the office is A. 64 　 B. 60 C. 54 　 D. 42		2		
		iv.	If the salary of Manoj is 40% less than that of Subhash, then by how much percentage is the salary of Subhash more than that of Manoj? A. 60% B. 66 1/4% 　 C. 66 2/3% D. 65%		1		
	b)	i.	The percentage profit earned by selling an article for Rs. 1920 is equal to the percentage loss incurred by selling the same article for Rs. 1280. At what price should the article be sold to make 25% profit? A. Rs. 2000 　 B. Rs. 2200 　 C. Rs. 2400 　 D. Data inadequate	3	2	3	12
		ii.	A man sells an article at a profit of 20%. If he had bought it at 10% less and sold it for Rs.18 more, he would have gained 40%. Find the cost price of the article. A. Rs.500 　　 B. Rs.300 　　 C. Rs.400 　　 D. Rs.550		3		
		iii.	A vegetable seller sells his vegetables at 20% profit. At the same time he uses false weights, which is 10% less than the actual weight. What will be his total gain percentage? A. 25% 　 B. 30% 　 C. 33.33% 　 D. 18 7/9%		4		
9.	a)	i.	In a certain code language "EASY" is written as "5117". In the same code language, how will "BEAM" be written as? A. 4512 　　　 B. 4567 　　 C. 2513 　　　 D. 2514 　　　 E. 2563	4	2	4	12
			Directions: Study the data given below carefully and answer the questions based on the same information: 'sky planets satellites stars' written as 'od lk sk jk' 'sun moon space planets' written as 'mj jk dn ho' 'rocket stars sun airplane' written as 'gt fa mj lk' 'space earth sky rocket' written as 'sk mn ho gt'				
		ii.	What is 'satellites' coded as? A. jk 　 B. od 　 C. ho 　 D. dn 　 E. None of the above		3		
		iii.	What will be the code for "rocket airplane" A. da gt 　　　 B. jk gt C. mj dn 　　　 D. sk od E. lk od		3		
			Direction: Study the following information carefully and the given questions. 　　'A ÷ B' means 'A is sister of B'.				

	iv.	'A × B' means 'A is brother of B'. 'A − B' means 'A is mother of B'. 'A + B' means 'A is father of B'. Which of the following means 'K is grandmother of V? A. M ÷ K + T × V B. M × K + T − V C. M × K − T + V D. M ÷ K − T ÷ V E. None of these		4		
b)	i.	What should come in place of the question mark (?) in the following number series ? 640, 384, 256, 192, 160, ? A. 142 B. 144 C. 154 D. 134 E. None of these	3	1	4	12
	ii.	What should come in place of the question mark (?) in the following number series ? 7, 8, 4, 13, −3, 22, ? A. −7 B. −10 C. −12 D. −14 E. None of these		2		
	iii.	If 'Lily' is called 'Lotus', 'Lotus' is called 'Rose', 'Rose' is called 'Sunflower' and 'Sunflower' is called 'Marigold', then which will be the national flower of India? A. Lily B. Lotus C. Rose D. Marigold E. Sunflower		1		
10. a)	i.	If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys in doing the same type of work will be: A. 5 days B. 4 days C. 6 days D. 7 days	4	4	5	12
	ii.	A can do a certain work in the same time in which B and C together can do it. If A and B together could do it in 10 days and C alone in 50 days, then B alone could do it in: A. 25 days B. 20 days C. 15 days D. 30 days		3		

	iii.	A and B undertake a project worth Rs. 54000. A alone can do the work in 10 days. They work together for 3 days. After 3 days, B works alone for 3 days and A completes the remaining work in 3 more days. What is the share of B in the earnings?
		    A. Rs. 21600 B. Rs. 33400 C. Rs. 27800
		    D. Rs. 35780 E. None of these
				4		

	iv.	A alone can complete a piece of work in 16 days and B alone can complete the same piece of work in 12 days. A start the work and after 12 days B join him. In how many days total work will be completed? A. 15 2/7 days B. 13 2/5 days C. 15 3/7 days D. 13 5/7 days E. None of these		3		
b)	i.	If two pipes function simultaneously, a tank is filled in 12 hours. One pipe fills the tank 10 hours faster than the other. How many hours does the faster pipe alone take to fill the tank? A. 20 hrs B. 18 hrs C. 15 hrs D. 12 hrs	3	4	5	12
	ii.	Three taps A, B and C can fill a tank in 12, 15 and 20 hours respectively. If A is open all the time and B and C are open for one hour each alternatively, the tank will be full in : A. 6 hrs B. 6.5 hrs C. 7 hrs D. 7.5 hrs		3		