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Code No. : 13162 N/O

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD**

*Accredited by NAAC with A++ Grade*

**B.E. III-Semester Main & Backlog Examinations, Jan./Feb.-2024**

**Skill Development Course-II -- Aptitude-I**

(Common for Civil, EEE, ECE & Mech.)

Time: 2 hours

Max. Marks: 40

*Note: Answer ALL questions in Part-A and any FIVE from Part-B*

**Part-A (5 × 1 = 5 Marks)**

Q.No.	Stem of the question	M	L	CO	PO
1.	The number from 1 to 33 are written side by side as follows: 123456... 33. What is the remainder when this number is divided by 9? A) 0 B) 1 C) 3 D) 6	1	1	1	12
2.	Ratio of the number of boys to girls in a class is 6:5. If the number of boys and girls increased by 40% and 60% respectively, what is the final ratio of the number of boys to girls in the class? A) 19:18 B) 20:19 C) 21:20 D) 22:21 E) None of these	1	3	2	12
3.	Raja's monthly salary is equal to 48 % of Anu's monthly salary. Anu's monthly salary is Rs. 24000 less than Baghya's monthly salary. If Baghya's monthly salary is Rs. 48000. What is Raja's annual salary? A) Rs. 138240 B) Rs. 125650 C) Rs. 107860 D) Rs. 142780 E) None of these	1	2	3	12
4.	If 'A * B' means 'A is father of B', 'A × B' means 'A is mother of A' and 'A # B' means 'A is husband of B' then which of the following means 'P is grandson of Q' ? A) Q # R × S * P B) Q * N × P # R C) Q * L # N × P D) P # N × M * Q	1	2	4	12
5.	Subhash can copy 70 pages in 16 hours, Subhash and Prakash together can copy 275 pages in 40 hours. In how much time can Prakash copy 30 pages? A) 15 hr. B) 12 hr. C) 14 hr. D) 18 hr. E) None of these.	1	3	5	12
<b>Part-B (5 × 7 = 35 Marks)</b>					
6. a)	i. Find the remainder when $2^{31}$ is divided by 5? A) 1 B) 4 C) 3 D) 2 E) None of these ii. Find the no. of zero's in $752!$ ? A) 186 B) 187 C) 192 D) 193 E) None of these iii. What is the unit digit of $373^{79}$ ? A) 9 B) 7 C) 3 D) 1 E) None of these iv. By multiplying with which of the following numbers, does the product of $8 \times 9 \times 10 \times 11 \times 12$ become a perfect square? A) 55 B) 11 C) 165 D) 310	4	2 2 2 1	1	12

Contd... 2

b)	<p>i. The policemen at three different places on a ground blow a whistle after every 42 sec, 60 sec and 78 sec respectively. If they all blow the whistle simultaneously at 9:30:00 hours, then at what time do they whistle again together? A) 1 hour 31 minutes B) 1 hour 50 minutes C) 2 hour 31 minutes D) 31 minutes</p> <p>ii. Find the least number which when divided by 5,7,9 and 12, leaves the same remainder 3 in each case A) 1245 B) 1248 C) 1263 D) 1268</p> <p>iii. Find the greatest number that will divide 296, 492 and 1246 leaving remainders 8, 12 and 22 respectively A) 12 B) 36 C) 24 D) 48 E) None of these</p>	3	3 2 2	1	12
7. a)	<p>i. A and B invest INR.12,000 and INR.16,000, respectively, in a business. At the year end, they share the profit in the ratio of 3:1. If A has invested his capital for the whole year, for how many months B has invested his capital? A) 4 months B) 3 months C) 6 months D) 8 months</p> <p>ii. The cost of 7 tables and 12 chairs is INR.48250. What is the cost of 21 tables and 36 chairs? A) INR.96500 B) INR.125500 C) INR.144750 D) Cannot be determined E) None of these</p> <p>iii. The average of four consecutive odd numbers A,B,C and D respectively is 24. What is the product of B and D? A) 483 B) 675 C) 621 D) 525 E) None of these</p> <p>iv. INR.73689 are divided between A and B in the ratio 4:7. What is the difference between thrice the share of A and twice the share of B? A) INR.36699 B) INR.46893 C) INR.20097 D) INR.26796 E) INR.13398</p>	4	2 1 1 1	2	12
b)	<p>i. The present ages of A and B are 42 and 36 years, respectively. After K years, the ratio of ages of B to A will be 15:17. What is value of K? A. 9 years B. 4 years C. 8 years D. 10 years</p> <p>ii. A, B, C started a business with their investments in the ratio 1:3:5. After 4 months, A invested the same amount as before and B as well as C withdrew half of their investments. The ratio of their profits at the end of the year is: A) 5:6:10 B) 2:5:7 C) 1:2:3 D) None</p> <p>iii. The monthly income of A and B are in the ratio of 3:2, and their expenditures are in the ratio of 5:3. If each of them saves Rs.1000 a month, then what is the income of A? A) 4000 B) 6000 C) 9000 D) None of these</p>	3	1 2 2	2	12
8. a)	<p>i. Sudhir spends 30% of his salary on food items, 20% of the remaining amount on entertainment and 30% of the remaining amount for paying various bills. If Sudhir saves Rs. 29400, what is his total salary? A) 35,000 B) 75,000 C) 25,000 D) 30,000 E) None of these</p>	4	3 2 1 2	3	12



	<p>ii. In an examination, 35% of students failed in quants and 42% of students failed in verbal while 14% failed in both the topics. If 222 students passed in both the topics, how many students appeared to write the examination? A) 500 B) 600 C) 700 D) 800</p> <p>iii. If the price of an article is increased by 15%, then by how much the household should decrease their consumption so as to keep his expenditure same? A) 13(1/23)% B) 13(2/23)% C) 11(1/23)% D) 11(2/23)% E) None of these</p> <p>iv. A reduction of 20% percent in the price of rice enables a housewife to buy 5 kg more for rupees 1200. The reduced price per kg of rice? A) 36 B) 45 C) 48 D) 60 E) None of these</p>				
b)	<p>i. A man sells a table at 12 % loss and a book at 19% profit then he earns Rs. 160 as profit. But if he sells the table at 12 % profit and the book at 16% loss then he bears a loss of Rs. 40. Find the price of one book? A) Rs. 4200 B) Rs. 4100 C) Rs. 4300 D) Rs. 4000</p> <p>ii. Successive discount of 10%, 12%, and 15% amount to a single discount of : A) 32.68% B) 35.28% C) 36.68% D) None of these</p> <p>iii. An article was sold for ₹2770. Had it been sold for ₹3000 there would have been an additional gain of 10%. Cost Price of the article is: A) 2100 B) 2200 C) 2300 D) 2400</p>	3	3 2 2	3	12
9. a)	<p>i. If 'Parrot' is known as 'Peacock', 'Peacock' is known as 'Swallow', 'Swallow' is known as 'Pigeon' and 'Pigeon' is known as 'Sparrow', then what would be the name of Indian National Bird? A) Parrot B) Swallow C) Peacock D) Pigeon E) Sparrow</p> <p>ii. If PARK is coded as 5394, SHIRT is coded as 17698 and PANDIT is coded as 532068, how would you code NISHAR in that code language? A) 266734 B) 231954 C) 201739 D) 261739</p> <p>iii. Which of the following letter will replace the question mark (?) in the given series? D, H, L, P, T, ? A) X B) R C) M D) P</p> <p>iv. 324, 341, 392, 477, 596, ? A) 729 B) 744 C) 739 D) 749 E) None of the above</p>	4	1 1 2 2	4	12
b)	<p>Direction: Study the following information carefully and answer the questions given below.</p> <p>Eight persons are in the family has three married couples. P is the sister-in-law of R who is the only child of T. S is the granddaughter of V. Q is the son of F who is the mother-in-law of R. E is the grandfather of S and has only two children. V is the father-in-law of Q.</p> <p>i. Who is the father-in-law of R? A) V B) P C) E D) F E) Cannot be determined</p>	3	3 4 3	4	12

	<p>ii. If P is married to W, then how W is related to F? A) Father-in-law B) Son C) Mother-in-law D) Son-in-law E) Daughter</p> <p>iii. Four of the following five are alike in a certain way as per the given arrangement and hence form a group. Find the one who does not belong to that group? A) T B) Q C) R D) S E) P</p>				
10. a)	<p>i. 30 men are supposed to do a work in 38 days. After 25 days, 5 more men were employed on work for which the work is completed in 1 day before. If 5 more men were not worked then how many days took in delay? A) 1 day B) 2 days C) 3 days D) 4 days E) None of these</p> <p>ii. 24 men take 12 days to complete a piece of work. They worked for a period of 4 days. After that, they were joined by 8 more men. How many more days will be taken by them to complete the remaining work? A) 8 days B) 9 days C) 7 days D) 6 days E) None of these</p> <p>iii. B takes twice time as A to complete a work and C takes thrice time as B to complete a work. If Rs.6000 is given to them to complete a work together then B gets how much amount? A) Rs1800 B) Rs3600 C) Rs600 D) Rs3000 E) Rs1200</p> <p>iv. A &amp; B can separately finish the work in 30 days and 50 days respectively. They worked together and A left the work, so B complete the remaining work in 10 days. Find after how many days A left the work? A) 10days B) 12days C) 15days D) 20days E) 18days</p>	4	3 2 2 3	5	12
b)	<p>i. Tap A can fill the empty tank in 12 hours, but due to a leak in the bottom it is filled in 15 hours, if the tank is full and then tap A is closed then in how many hours the leak can empty it? A) 45 hours B) 48 hours C) 52 hours D) 60 hours E) None of these</p> <p>ii. Pipe A fills the tank in 24 hours and pipe B fills the tank in 36 hours and pipe C empties the tank in 40 hours. If pipes A, B and C are opened simultaneously, how many hours are required to fill the tank completely? A) 16.5 hours B) 18.5 hours C) 20.5 hours D) 22.5 hours E) None of these</p> <p>iii. An inlet pipe can fill a tank in 48 minutes and an outlet pipe can empty the same tank in 144 minutes. If both pipes are opened together, then find the time required to fill the 5/12th of the tank. A) 25 hours B) 20 hours C) 30 hours D) 45 hours E) None of these</p>	3	2 2 3	5	12
11. a)	<p>i. A room is 2.47m long and 2.09m broad. It is required to pave the floor with minimum square tiles. Find the number of tiles required for floor. A) 143 B) 361 C) 142 D) 165 E) None of these</p> <p>ii. Find the least perfect square number which is divisible by 2, 3, 4, 5, 6. A) 3600 B) 900 C) 1600 D) 2500 E) None of these</p> <p>iii. If a number is divided by 15, it leaves a remainder of 7. If thrice the number is divided by 5, then what is the remainder? A) 5 B) 6 C) 7 D) 1</p> <p>iv. In a division sum, the divisor is 12 times the quotient and 5 times the remainder. If the remainder be 48 then the dividend is— A) 240 B) 576 C) 4800 D) 4848</p>	4	3 1 2 2	1	12



b)	<p>i. The respective ratio of the present ages of a mother and daughter is 7 : 1. Four years ago the respective ratio of their ages was 19 : 1. What will be the mother's age four years from now? A) 42 yrs      B) 38 yrs      C) 46 yrs      D) 36 yrs      E) None of these</p> <p>ii. The average run of a cricketer after 18 matches was 56.5. If he made 101 runs and 123 runs in 19th and 20th match respectively. What is his new average run after 20th match? A) 62.05      B) 61.25      C) 64.45      D) 63.85      E) 60.75</p> <p>iii. In an examination, a student scores 6 marks for every correct answer and loses 4 marks for every wrong answer. If he attempted 80 question and obtained 310 marks, how many questions did he attempted correctly? A) 59    B) 65    C) 63    D) 67    E) 61</p>	3	3 2 3	2	12
12. a)	<p>i. Cost price of 32 pens is same as the selling price of 24 pens. Then profit % is: A) 33% B) 121/3% C) 31/3% D) 100/3%</p> <p>ii. Marked price of an article is 45% above its cost price and by giving 20% discount on marked price he earned rs.128 as profit. What is profit percent incurred when he sells same article rs.72 more than its selling price. A) 22% B) 28% C) 34% D) 25%      E) 12%</p> <p>iii. The population of a town is 176000. If it increases at the rate of 5% per annum, what will be it's population 2 years hence? A) 194000      B) 194040      C) 190440      D) 194104</p> <p>iv. In an election a person wins over another one by a marginal difference of 680 votes which 17% of total votes. In election 15% votes are invalid. Find the valid votes? A) 3500 B) 4100 C) 3400 D) can't be determined E) None of these</p>	4	2 3 4 2	3	12
b)	<p>In a certain code language, 'loud of Speaker minister' is written as 'ga gmo til su' 'hard false loud promise on', is written as 'kil zo gmo ye na' 'minister false political energy' is written as 'zo ra til da' 'political conclude of promise' is written as 'da ga nic kil'.</p> <p>i. What is the code for 'on'? A) ye B) na C) zo D) Either na or zo      E) Either ye or na'</p> <p>ii. What does 'su' stand for? A) minister B) loud C) of D) Speaker E) None of these</p> <p>iii. What is the code for 'energy loud conclude'? A) nic ye til      B) gmo ra nic C) ra ga gmo      D) da ra nic      E) None of these</p>	3	3 3 3	4	12

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	40%
iii)	Blooms Taxonomy Level – 3 & 4	40%

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