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Code No. : 14164 (J) N/O

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. IV-Semester Main & Backlog Examinations, July-2023

Critical Thinking (OE-II)

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	What Makes a Person Fair? Write any four traits of a fair minded thinker.	2	4	1	10,12
2.	Question: A politician is arguing against a proposal to increase taxes. They say, "If we increase taxes, people will stop working and the economy will collapse." What fallacy is this? Justify?	2	2	1	10,12
3.	Question 1: Tom is friends with two brothers, Mike and Chris. Mike's sister is good friends with Tom's brother. Who is Tom's brother?  Question 2: In a group of friends - Alex, Ben, and Charlie - each person has a pet. Alex's pet is a cat, and Ben's pet is a dog. Charlie's pet is a bird. Who owns the dog?	2	3	2	10,12
4.	What would you do if you were not afraid? Mention two points	2	4	2	10,12
5.	Problem: You are a student in a potions class and you are given the following instructions:  You must brew a potion that will make the drinker invisible. You have a limited number of ingredients to work with. You must follow the instructions carefully, or the potion will not work. Questions:  What are the critical thinking skills that are important in solving this problem? What are the potential benefits and drawbacks of following the instructions carefully?	2	3	3	10,12
6.	Here is a case study with a multiple choice question based on drawing conclusions:  Case Study:  A company is trying to increase sales of its new product. The company has been running a marketing campaign for the past month, but sales have not increased. The company is considering changing its marketing strategy.	2	4	3	10,12

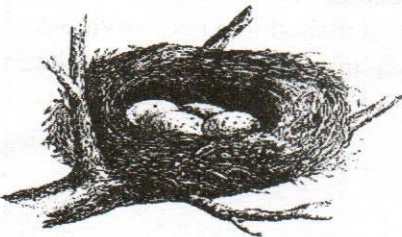
	<p>Multiple Choice Question:</p> <p>Based on the information in the case study, which of the following conclusions is most likely and why?</p> <ol style="list-style-type: none"> <li>1. The marketing campaign is not effective.</li> <li>2. The product is not appealing to customers.</li> <li>3. The company needs to change its target market.</li> </ol>				
7.	<p>Case Scenario:</p> <p>Avinash is a budding entrepreneur who is planning to launch his own tech startup. He firmly believes that his idea is revolutionary and has the potential to disrupt the market. Avinash is highly optimistic about the success of his venture and envisions rapid growth, a large customer base, and substantial profits in a short period of time. He confidently dismisses the possibility of failure or challenges that may arise during the startup journey.</p> <p>Question:</p> <p>In the context of the case scenario, discuss the concept of optimism bias and its potential impact on Avinash's entrepreneurial decision-making and outcomes. ?</p>	2	3	4	10,12
8.	<p>Here is a problem that can be solved using SWOT analysis taught in your Critical Thinking Class:</p> <p>Company: XYZ Company</p> <p>Industry: Technology</p> <p>Problem: XYZ Company is facing increasing competition from new entrants to the market.</p> <p>SWOT Analysis:</p> <p>Strengths:</p> <ul style="list-style-type: none"> <li>● Strong brand recognition</li> <li>● Innovative products</li> <li>● Experienced workforce</li> </ul> <p>Weaknesses:</p> <ul style="list-style-type: none"> <li>● High prices</li> <li>● Slow to adapt to change</li> <li>● Lack of focus on marketing</li> </ul>	2	3	4	10,12

	<p>Opportunities:</p> <ul style="list-style-type: none"> <li>● Expand into new markets</li> <li>● Launch new products and services</li> <li>● Partner with other technology companies</li> </ul> <p>Threats:</p> <ul style="list-style-type: none"> <li>● New entrants to the market</li> <li>● Changing consumer preferences</li> <li>● Regulatory changes</li> </ul> <p>Solution:</p> <p>Based on the SWOT analysis, XYZ Company can address the increasing competition from new entrants to the market : mention two?</p>				
9.	<p>Select the one best answer from the list below:</p> <ol style="list-style-type: none"> <li>1. Perception is only influenced by the current situation/setting</li> <li>2. First impressions are best when interpreting others' behavior</li> <li>3. Personal biases seldom interfere with perception</li> <li>4. None of the above</li> </ol> <p>Which of the following is NOT one of the basic steps in perception checking?</p> <ol style="list-style-type: none"> <li>1. Provide a description of the observed behavior</li> <li>2. Complain to others about the person's behavior and then ask for their interpretation</li> <li>3. Provide two alternative interpretations of the behavior</li> <li>4. Request clarification from the person</li> </ol>	2	1	5	10,12
10.	<p>What are the four stages of Problem solving ? Give examples</p>	2	2	5	10,12
<b>Part-B (5 × 8 = 40 Marks)</b>					
11. a)	<p>The Case of the Climate Change Debate</p> <p>There is a lot of debate about climate change. Some people believe that climate change is real and that it is caused by human activity. Others believe that climate change is not real or that it is not caused by human activity.</p> <p>A group of students are having a discussion about climate change. They are all from different backgrounds and have different beliefs about climate change.</p> <p>Some of the students believe that climate change is real and that it is caused by human activity. They point to the fact that the Earth's average temperature has been rising for the past century, and they argue that this is evidence of climate change.</p>	6	4	1	10,12

<p>Other students believe that climate change is not real or that it is not caused by human activity. They argue that the Earth's climate has always been changing, and that there is no evidence that human activity is causing the current warming trend.</p> <p>The students are getting more and more heated in their discussion. They are starting to say things that they don't mean, and they are about to walk away from each other when one of the students stops and says, "Wait. I think we're all being closed-minded."</p> <p>The student explains that they need to be open to the possibility that they are all wrong. They need to be willing to listen to each other's arguments and to consider the evidence.</p> <p>The students agree to continue their discussion, but this time they will try to be more open-minded. They listen to each other's arguments, and they try to understand each other's points of view.</p> <p>They still disagree, but they are able to have a respectful conversation. They learn a lot about each other's beliefs, and they come to a better understanding of the climate change debate.</p> <p>Question for Students</p> <p>What are the challenges of being open-minded in the face of strong beliefs? How can we overcome these challenges and be more open-minded?</p>				
<p>b) How can intellectual conformity hinder the progress of knowledge and innovation in a society?</p>	2	2	1	10,12
<p>12. a) How can engineering students use their skills and knowledge to find jobs during a recession? Use your learning from the Critical Thinking Classes to answer these questions.</p>	4	3	2	10,12
<p>b) Solve these four non linear problems:</p> <ol style="list-style-type: none"> <li>The Chessboard Challenge: On a standard 8x8 chessboard, you have 64 squares. If you place a grain of rice on the first square, two grains on the second square, four grains on the third square, and so on, doubling the number of grains on each subsequent square, how many grains of rice would you have in total on the chessboard?</li> <li>The Frog's Jump: A frog is positioned on one side of a river that is 10 meters wide. The frog can only jump forward but has the ability to jump 3</li> </ol>	4	4	2	10,12

	<p>meters forward and 2 meters backward. How many jumps will the frog need to reach the other side of the river?</p> <p>3. The Escalator Challenge: An escalator is moving upward at a constant speed. If a person walks up the escalator, they can cover 30 steps in 10 seconds. However, if they stand still on the escalator, it takes them 30 seconds to reach the top. How many steps are on the escalator?</p> <p>4. The Train Puzzle: Two trains are initially 200 kilometers apart and traveling toward each other on the same track. The first train is traveling at 50 km/h, and the second train is traveling at 70 km/h. A fly starts on the first train and, upon reaching it, immediately turns around and flies back towards the second train. The fly continues flying back and forth between the trains until they collide. How far will the fly have traveled?</p>				
13. a)	<p>Read the Case Study given and answer the question. A company is considering investing in a new product. The product has been tested in a small number of trials, and it has been shown to be effective in those trials. However, the company is concerned about the potential risks of the product.</p> <p>Question: What conclusions can the company draw about the safety of the product?</p>	5	3	3	10,12
b)	<p>Case Study: A politician is running for office. The politician has a long history of public service, and they have a strong record of accomplishment. However, the politician has also been accused of corruption.</p> <p>Questions: Given are questions from three categories that need to be asked to solve this case. One question has been given to you as a sample. Write one of your own in each of those categories.</p> <p>1. Fact-finding questions: What is the name of the politician?</p> <p>2. Interpretive questions: What is the meaning of the politician's decision to run for office?</p> <p>3. Evaluative questions: Was the politician's decision to run for office the right one?</p>	3	4	3	10,12
14. a)	<p>Scenario: Satish: "I can't believe I failed that exam! I studied so hard, and now my grade is ruined. I'm just not cut out for this engineering program."</p>	4	3	4	10,12

	<p>Rishi: "I understand that you're feeling disappointed right now, but remember that one exam doesn't define your abilities. It's important to learn from this experience and find ways to improve. What strategies can you implement to better prepare for future exams?"</p> <p>Question: . .</p> <p>How does the emotionally balanced classmate Rishi demonstrate empathy and emotional intelligence in his response to Satish?</p>				
<p>b)</p>	<p>Bias is the tendency to favor or hold a particular perspective, opinion, or preference, often leading to subjective judgments and influencing decision-making processes. It can arise from personal experiences, cultural influences, or cognitive processes.</p> <p>Give an example of each of the following Biases:</p> <ol style="list-style-type: none"> <li>1. Availability Heuristic</li> <li>2. Anchoring bias</li> <li>3. Self serving bias</li> <li>4. Halo effect</li> </ol>	<p>4</p>	<p>2</p>	<p>4</p>	<p>10,12</p>
<p>15. a)</p>	<p>Case: Conflicting Perspectives on Urban Development</p> <p>In a city undergoing rapid urban development, there is a case study that highlights the limitations of different points of view.</p> <p>Stakeholder 1: Environmental Advocate</p> <p>Emily is an environmental advocate who strongly believes in the importance of preserving natural ecosystems and reducing the carbon footprint of urban development. She argues that the city should prioritize green spaces, promote sustainable transportation, and implement strict regulations on new construction projects to minimize environmental impact.</p> <p>Stakeholder 2: Property Developer</p> <p>John is a property developer who sees urban development as an opportunity for economic growth and prosperity. He believes that the city should focus on attracting investments, constructing high-rise buildings, and creating job opportunities to stimulate the local economy. John argues that economic development will benefit the community in the long run, even if it means sacrificing some green spaces.</p>	<p>6</p>	<p>4</p>	<p>5</p>	<p>10,12</p>

	<p>Stakeholder 3: Local Resident</p> <p>Sarah is a local resident who has lived in the city for several years. She values both the environment and economic growth but also considers the impact of urban development on the quality of life for the community. Sarah is concerned about increased traffic congestion, limited affordable housing options, and the potential loss of neighborhood charm due to excessive construction.</p> <p>What are the differences in given perspective?</p>												
<p>b)</p>	<p>Question: How can we use the analogy of a bird's nest to generate new ideas for product design?</p> 	<p>2</p>	<p>5</p>	<p>5</p>	<p>10,12</p>								
<p>16. a)</p>	<p>Match the following</p> <table border="1"> <tr> <td> <p>1) Ad hominem:</p> </td> <td> <p>a) This fallacy suggests that something is true because everyone else believes it. For example, "Everyone is doing it, so it must be okay!"</p> </td> </tr> <tr> <td> <p>2) Appeal to authority:</p> </td> <td> <p>b) This fallacy suggests that because one event follows another, the first event caused the second. For example, "I ate a banana and then I got a good grade on my test, so bananas must make you smarter!"</p> </td> </tr> <tr> <td> <p>3) Bandwagon:</p> </td> <td> <p>c) This fallacy relies on the authority of an expert to support an argument. For example, "I saw it on the news, so it must be true!"</p> </td> </tr> <tr> <td> <p>4) False cause:</p> </td> <td> <p>d) This fallacy attacks the person making the argument, rather than the argument itself. For example, "You can't trust anything that politician says, they're a crook!"</p> </td> </tr> </table>	<p>1) Ad hominem:</p>	<p>a) This fallacy suggests that something is true because everyone else believes it. For example, "Everyone is doing it, so it must be okay!"</p>	<p>2) Appeal to authority:</p>	<p>b) This fallacy suggests that because one event follows another, the first event caused the second. For example, "I ate a banana and then I got a good grade on my test, so bananas must make you smarter!"</p>	<p>3) Bandwagon:</p>	<p>c) This fallacy relies on the authority of an expert to support an argument. For example, "I saw it on the news, so it must be true!"</p>	<p>4) False cause:</p>	<p>d) This fallacy attacks the person making the argument, rather than the argument itself. For example, "You can't trust anything that politician says, they're a crook!"</p>	<p>4</p>	<p>2</p>	<p>1</p>	<p>10,12</p>
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<p>b)</p>	<p>Case Study:</p> <p>You are a marketing manager for a small business. The economy is in a recession, and you are worried about your company's sales. You</p>	<p>4</p>	<p>4</p>	<p>2</p>	<p>10,12</p>								

	<p>have been working hard to develop new marketing strategies, but you are still concerned about the future.</p> <p>Question:</p> <p>What are some of the specific things that you can do to influence your company's sales during a recession?</p>				
17.	Answer any <i>two</i> of the following:				
a)	<p>Article:</p> <p>A recent article published on a popular news website claims that a new study has found that the COVID-19 vaccine can cause autism in children. The article cites a study that was published in a peer-reviewed journal, but the study actually found no such link. The article also makes a number of other claims that are not supported by evidence.</p> <p>Create a Fake News Identification Report:</p> <p>The article in question contains a number of red flags that suggest that it is fake news. What are the Red flags?</p>	4	3	3	10,12
b)	<p>Here is a dialogue based short conversation that demonstrates active listening: Fill in the dialogue for Person 2 who is demonstrating active Listening</p> <p>Person 1: I'm so stressed out! I have so much work to do, and I don't know where to start.</p> <p>Person 2: (Attentively listening, making eye contact, and nodding) I can see how you're feeling. It sounds like you have a lot on your plate.</p> <p>Person 1: Yeah, it's been crazy. I have a presentation due tomorrow, and I'm still working on the research. I also have a meeting with my boss later today, and I'm not sure what to expect.</p> <p>Person _____ 2: _____ (Paraphrasing)</p> <p>Person 1: Exactly. I'm just feeling overwhelmed.</p> <p>Person _____ 2: _____ (Asking open-ended questions)</p> <p>Person 1: I'm hoping to do well on the presentation. I've been working hard on it, and I want to make a good impression. I'm also hoping to get some feedback from my boss on my work.</p>	4	4	4	10,12



<p>Person 2: _____ (Offering support)</p> <p>Person 1: Thanks. I appreciate that.</p> <p>Person 2: _____</p> <p>Person 1: No, I think I'm good. Just listening to me vent has helped a lot.</p> <p>Person 2: _____</p> <p>In this dialogue, Person 2 demonstrates active listening by:</p> <ol style="list-style-type: none"> <li>1. Paying attention to the speaker's words and body language.</li> <li>2. Paraphrasing the speaker's words to show that they have been understood.</li> <li>3. Asking open-ended questions to encourage the speaker to elaborate.</li> </ol> <p>Offering support and encouragement.</p>				
<p>c) Let's say you are a product designer and you are trying to come up with a new design for a coffee mug. You could start by looking at pictures of coffee mugs. What do you notice about the pictures? What are the different shapes, sizes, and colors of coffee mugs? What materials are they made of? What features do they have?</p> <p>Once you have a good understanding of the different types of coffee mugs, you could start to look for visual connections between them. For example, you might notice that all coffee mugs have a handle. You might also notice that many coffee mugs have a spout. These visual connections can help you to generate new ideas for coffee mugs.</p> <p>For example, you might come up with the idea of a coffee mug with a built-in straw. This would be a new and innovative way to drink coffee. You might also come up with the idea of a coffee mug that is made of recycled materials. This would be a sustainable and environmentally friendly way to design a coffee mug.</p> <p>What are the benefits of generating ideas through Visual connectiona?</p>	4	3	5	10,12

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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