Shiv Nadar University Chennai

End Semester Examinations, 2023-2024 Even

Question Paper

Name of the Program: Common to B.Tech. AI & DS, B.Tech. CSE (IoT) and B.Tech. CSE (CS)		Semester: II
Course Code & Name: EN1002 ENGLISH FOR ENGINEERS		
Time: 3 Hours	Regulation 2021	Maximum: 100 Marks

Q.No		Questions	Marks	CO#	KL#
1	a	**Read the following passage and answer the questions that follow:** Human activities have caused the earth to slowly heat up, and now it looks like war –another very human phenomenon –is preventing scientists from accurately measuring how rapidly our climate is changing. Global temperatures are rising, but temperatures in the Arctic region are rising even faster. Studies suggest a grim reality: that the Arctic is warming nearly four-times faster than the rest of the world. The consequences of this go way beyond just the Arctic. The melting permafrost and rising sea-levels can have devastating effects on local ecosystems as well as the climate. Many research stations in the Arctic are part of the International Network for Terrestrial Research and Monitoring in the Arctic (INTERACT). They continuously monitor environmental conditions in the different countries in the region. One country that makes up almost half of it is Russia, but since it invaded Ukraine, foreign scientists haven't had access to data from Russian field stations. Global collaborations with Russia have collapsed since the invasion, and scientists from outside Russia who were earlier able to travel to field sites in the country to collect data can't do so anymore. Climate projects that run on European funding also don't allow them to officially collaborate with Russian partners for now. "We have to deal with this invisible wall, where there is no flow of data from the Russian side to our side. It is kind of like a blind spot," said Efrén López-Blanco, an Arctic researcher at Aarhus University in Denmark. "And I want to believe that it is a temporary blind spot." Dr. López-Blanco and his colleagues recently reported that excluding data from Russia has heavily biased climate data. "When there is an increase in bias, there is a decrease in our ability to either describe or track Arctic changes," he said. The researchers used multiple earth-system models (ESMs)to understand ecosystem conditions across the Arctic region. They focused on eight "essential variables" of the Arctic ecosystem, including temperature, vegetation, precipitation, and snow depth. ESMs are fully coupled climate, land, and ocean computational models that can be used to generate data for the entire planet. Those used in the study were the same ones the U.N.	10	CO1	KL3

Intergovernmental Panel on Climate Change uses to assess the world's changing climate.

First, the researchers wanted to use the models to find out if INTERACT stations in the Arctic, including the Russian ones, are able to potentially collect data representative of the pan-Arctic region. They examined 60 of the 94 INTERACT stations, including only those above 59 degrees N latitude. "Monitoring across the Arctic is not standardised," Dr. López-Blanco said. So he and his colleagues primarily used model-generated data.

When they compared all the INTERACT stations' data with the pan-Arctic data on the eight ecosystem variables, they realised there was already a difference in what INTERACT sites could estimate about the changes in the pan-Arctic region. These differences lead to a bias in the representation of ecosystem conditions in the Arctic.

It so happens that INTERACT sites are located in warmer and wetter parts of the Arctic and regions with less biomass and soil carbon, which could be contributing to this bias.

Once the 17 Russian stations in Siberia were excluded, they found the differences — and thus the biases — increased further, and the ability to accurately describe changes in the Arctic decreased further.

Specifically, when the researchers used the ESMs to predict the state of ecosystem variables in 2100, they found current biases in the estimation of ecosystem variables after excluding Russian data showed a change similar to what is expected after 80 years of climate change.

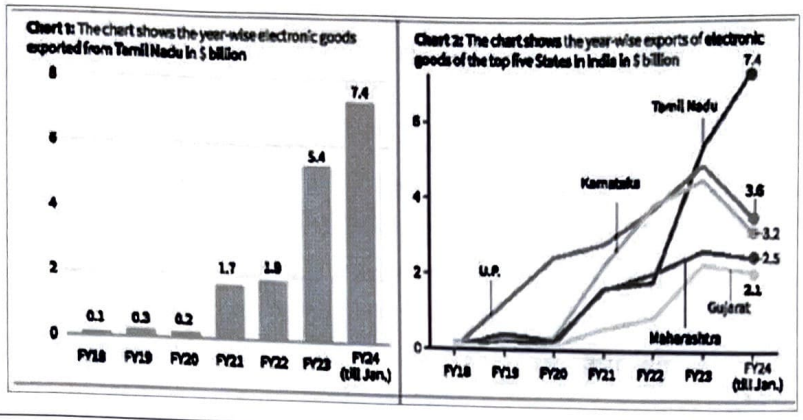
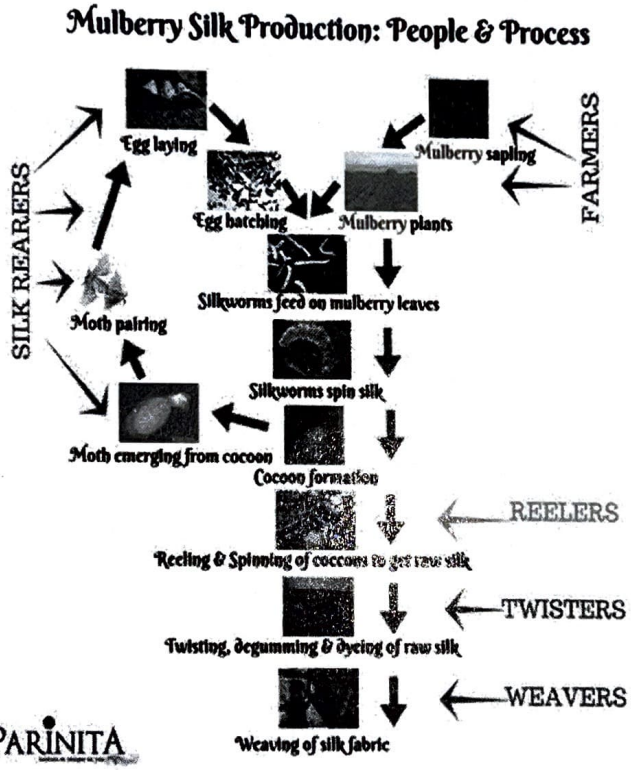
The result, Dr. López-Blanco said, is a decline in "our ability to inform management and conservation strategies and... our chances to properly mitigate the negative consequences of climate change."

With Russian data continuing to stay out of reach, Dr. López-Blanco suggested looking for other regions in the Arctic with similar environments to Siberia, such as parts of northern Scandinavia and Canada, and collecting data from there to partially counter the bias, "at least in the short term until the war is over."

"In the climate change research field, there is already a very good tendency to share data, as we are working together on something that affects us all," according to Dr. López-Blanco. "We still need more coordination between the stations, standardisation in terms of using similar sensors and methods, and more open-source data sharing. These elements are key to gaining a better understanding of current Arctic conditions and preparing effectively for future changes."

Hrishikesh Chandanpurkar, a fellow at the Centre for Sustainability, Environment, and Climate Change at FLAME University, Pune, and a World Bank consultant, said research stations should be as well distributed across a region as possible. Bearing in mind the spatial variability of the data and not just the logistical ease of setting up and maintaining the stations will help mitigate biases.

		"'Don't stop sharing critical scientific data' is also something that could be worked into the protocols of activities that are permitted to go on even during a war," Dr. Chandanpurkar said. "Each country is co-dependent on other countries because of the causes and the impacts of climate change. So it makes sense to have a system in place where we are safeguarding a continuous observation network and its sharing." Scientists collecting data in the Arctic already face an uphill battle with the unforgiving weather and polar bears that sometimes accidentally destroy instruments. But lack of data because of war is an additional, and exacerbating, variable. "We people of science care about collecting our data, filling knowledge gaps, and understanding the ecosystem processes that we are interested in," Dr. López-Blanco said. What they quantified in the paper is "the collateral damage of something that is happening elsewhere". i. One of the man-made activities, mentioned in the passage, that obstructs measuring the pace of climate change is ___. ii. The rest of the world is heating four-times ___ than the Arctic region. iii. State with reasons whether the following statement is True or False: López-Blanco is a pessimist. iv. Efrén López-Blanco, an Arctic researcher, says the lack of Russian data creates a(n) ___ in their ability to track Arctic changes. v. The number of INTERACT stations in the Arctic range is ___. vi. The researchers found out that the relation between the biases and the ability to describe changes in the Arctic are ___ proportional. vii. ___ is a region that has a similar environment to Siberia. viii. What suggestion does Chandanpurkar offer to mitigate biases in climate change research? ix. What harm could polar bears do to climate change research? x. What does "collateral damage" mean in the context of this passage?			
2	a	Fix the errors, if any, in the following recommendations: i. Ensure water purifiers are serviced at regular intervals. ii. Do not waste water. iii. You should not turn off the power supply to the RO unit. iv. Nobody should not take the drinking glass kept on the top of the RO unit away. v. If you notice any fungi/algae growth in the water storage tank, report it immediately.	5	CO4	KL4
	b	Now rewrite the above recommendations as checklist.	5	CO4	KL4
3	a	Write an essay of about 250 words on any ONE of the following topics: • Identify any social problem that you see around and suggest a technological solution. • Can Electronic Voting Machines (EVMs) be tampered with? State your opinion with valid reasons. • The use and misuse of AI.	10	CO4	KL6

4	a	Prepare a cover letter and a resume of yours to be considered for the role of Shiv Nadar University Chennai Student Ambassador.	10	CO4	KL3
5	a	Based on the following two charts/graphs, write a description and an interpretation of the charts/graphs. Chart 1 shows the year-wise electronic goods exported from Tamil Nadu in $ billion and chart 2 shows the year-wise exports of electronic goods of the top five states in India in $ billion. 	10	CO4	KL4
6	a	Describe the process of mulberry silk production using the information provided in the diagram below: 	5	CO4	KL6
	b	Write two paragraphs one comparing and the other contrasting the life of your generation and that of the next generation.	5	CO4	KL6
7	a	Write the minutes of a meeting held among the members of the Animal Rights Group to discuss the issue of taking care of stray dogs on campus.	10	CO4	KL3
8	a	Choose the correct word from those given to complete the pair of verbal analogies:	2	CO1	KL3

		i. jibe: praise::_____ : enlighten a. jib b. delude c. worship d. wed ii. segregate: unify:: repair: _____ a. approach b. push c. damage d. outwit iii. _____: marsupial::monkey : primate a. platypus b. ape c. honeybee d. kangaroo iv. monarch: _____:: king : cobra a. queen b. butterfly c. royal d. venom			
	b	Change the following sentences to its passive voice form without changing their meaning: Can you submit the applications at the office tomorrow? They will scrutinize all the applications soon after they reach the deadline.	2	CO4	KL3
	c	Convert the following sentences into reported speech: i. Ram to Rita, "How happy are you?" ii. Rita to Ram, "I feel contented these days after practising meditation every morning." iii. Ram to Rita, "How long have you been practising it?" iv. Rita, "It will be three months tomorrow."	2	CO3	KL3
9	a	Use the clues in brackets to create embedded clauses for the following sentences: i. My flask is now broken. (made of delicate glass) ii. We are visiting my uncle this summer. (lives in Australia) iii. The refrigerator still always keeps things very cool. (ten years old) iv. The followers of Buddha spread his teachings spread far and wide. (great philosopher)	2	CO4	KL3
	b	Complete the following sentences using the verb in brackets, by paying attention to the rules of if-conditionals: i. If you hadn't failed the exams, you _____ eligible for the award. (BE) ii. I would help you with the decoration arrangements for the function if I _____ here at the time. (BE) iii. If you _____ somewhat well, we could attend the concert. (FEEL) iv. If they cool water to 0° C, it _____. (FREEZE)	2	CO3	KL3
10	a	Listening test administered separately.	10	CO2	KL2
11	a	Speaking test administered separately.	10	CO3	KL4

KL – Bloom's Taxonomy Levels
(KL1: Remembering, KL2: Understanding, KL3: Applying, KL4: Analyzing, KL5: Evaluating, KL6: Creating)
CO – Course Outcomes
