

Shiv Nadar University Chennai

Mid 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 (Cyber Security)		Semester: II
Course Code & Name: EN1002 ENGLISH FOR ENGINEERS		
Regulation 2021		
Time: 2 Hours	Answer All Questions	Marks: 50

Q.No.	Questions	Marks	CO	KL
a	<p>Read the following passage and answer questions that follow:</p> <p>Time travel took a small step away from science fiction and toward science recently when physicists discovered that subatomic particles known as neutrinos – progeny of the sun’s radioactive debris – can exceed the speed of light. The unassuming particle – it is electrically neutral, small but with a “non-zero mass” and able to penetrate the human form undetected – is on its way to becoming a rock star of the scientific world.</p> <p>Researchers from the European Organisation for Nuclear Research (CERN) in Geneva sent the neutrinos hurtling through an underground corridor toward their colleagues at the Oscillation Project with Emulsion-Tracing Apparatus (OPERA) team 730 kilometres away in Gran Sasso, Italy. The neutrinos arrived promptly – so promptly, in fact, that they triggered what scientists are calling the unthinkable – that everything they have learnt, known or taught stemming from the last one hundred years of the physics discipline may need to be reconsidered. The issue at stake is a tiny segment of time – precisely sixty nanoseconds (which is sixty billionths of a second). This is how much faster than the speed of light the neutrinos managed to go in their underground travels and at a consistent rate (15,000 neutrinos were sent over three years). Even allowing for a margin of error of ten billionths of a second, this stands as proof that it is possible to race against light and win. The duration of the experiment also accounted for and ruled out any possible lunar effects or tidal bulges in the earth’s crust.</p> <p>Nevertheless, there’s plenty of reason to remain sceptical. According to Harvard University science historian Peter Galison, Einstein’s relativity theory has been “pushed harder than any theory in the history of the physical sciences”. Yet each prior challenge has come to no avail, and relativity has so far refused to buckle. So is time travel just around the corner? The prospect has certainly been wrenched much closer to the realm of possibility now that a major physical hurdle – the speed of light – has been cleared. If particles can travel faster than light, in theory travelling back in time is possible. How anyone harnesses that to some kind of helpful end is far beyond the scope of any modern technologies, however, and will be left to future generations to explore.</p>	10	CO1	KL4

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|--|---|--|--|--|
| | <ul style="list-style-type: none"> i. The main focus of the passage is <ul style="list-style-type: none"> a) The discovery of a new subatomic particle b) The implications of neutrinos exceeding the speed of light c) The development of time travel technology d) To challenge Einstein's theory of relativity ii. The neutrinos discussed in the passage <ul style="list-style-type: none"> a) were created by scientists in a lab. b) are a type of cosmic radiation. c) are a byproduct of nuclear reactions in the sun. d) are the building blocks of atoms. iii. The main characteristic of the neutrino mentioned in the passage is <ul style="list-style-type: none"> a) It is electrically charged. b) It is easily detectable. c) It is very large in size. d) It can pass through matter without interaction. iv. How far did the neutrinos travel in the experiment? <ul style="list-style-type: none"> a) 60 nanoseconds b) 730 kilometres c) 15,000 kilometres d) The distance is not mentioned. v. How fast did the neutrinos travel compared to the speed of light? <ul style="list-style-type: none"> a) Slightly slower b) Slightly faster c) Much slower d) Much faster vi. How long did the experiment involving neutrinos last? <ul style="list-style-type: none"> (a) 60 nanoseconds (b) 10 billionths of a second (c) 3 years (d) The passage doesn't specify. vii. According to the passage, the consequence of neutrinos exceeding the speed of light <ul style="list-style-type: none"> a) confirms the existence of time travel. b) disproves Einstein's theory of relativity entirely. c) suggests the possibility of time travel in theory. d) has no implications for physics beyond the behaviour of neutrinos. viii. The scientific community's attitude towards the experiment's findings can best be described as <ul style="list-style-type: none"> a) There is universal acceptance. b) There is scepticism and a call for further investigation. | | | |
|--|---|--|--|--|

		<p>c) The findings are being celebrated as a breakthrough.</p> <p>d) The passage doesn't mention the scientific community's reaction.</p> <p>ix. Based on the passage, is time travel currently possible?</p> <p>a) Yes, the experiment with neutrinos proves it.</p> <p>b) No, the technology for time travel doesn't exist.</p> <p>c) The answer is inconclusive based on the passage.</p> <p>d) Time travel is only possible for subatomic particles.</p> <p>x. The primary purpose of the final sentence of the passage is</p> <p>a) To introduce the possibility of building time travel machines.</p> <p>b) To highlight the remaining challenges in achieving time travel.</p> <p>c) To emphasise the excitement surrounding the discovery.</p> <p>d) To conclude the passage by summarising the main points.</p>			
2	a	<p>Make notes based on the information available below in any suitable format. Use abbreviations, wherever necessary. Give a suitable title.</p> <p>So, is time travel just around the corner?</p> <p>Certainly, any prospective time travellers may have to overcome more physical and logical hurdles than merely overtaking the speed of light. One such problem, posited by René Barjavel in his 1943 text <i>Le Voyageur Imprudent</i> is the so-called grandfather paradox. Barjavel theorised that, if it were possible to go back in time, a time traveller could potentially kill his own grandfather. If this were to happen, however, the time traveller himself would not be born, which is already known to be true. In other words, there is a paradox in circumventing an already known future; time travel is able to facilitate past actions that mean time travel itself cannot occur.</p> <p>Other possible routes have been offered, though. For Igor Novikov, astrophysicist behind the 1980s' theorem known as the self-consistency principle, time travel is possible within certain boundaries. Novikov argued that any event causing a paradox would have zero probability. It would be possible, however, to “affect” rather than “change” historical outcomes if travellers avoided all inconsistencies. Averting the sinking of the Titanic, for example, would revoke any future imperative to stop it from sinking – it would be impossible. Saving selected passengers from the water and replacing them with realistic corpses would not be impossible, however, as the historical record would not be altered in any way.</p> <p>A further possibility is that of parallel universes. Popularised by Bryce Seligman DeWitt in the 1960s (from the seminal formulation of Hugh Everett), the many-worlds interpretation holds that an alternative pathway for every conceivable occurrence actually exists. If we were to send someone back in time, we might therefore expect never to see him again – any alterations would divert that person down a new historical trajectory.</p> <p>A final hypothesis, one of unidentified provenance, reroutes itself quite efficiently around the grandfather paradox. Non-existence theory suggests exactly that – a person would quite simply never exist if they altered their</p>	7	CO1 & 4	KL5

		ancestry in ways that obstructed their own birth. They would still exist in person upon returning to the present, but any chain reactions associated with their actions would not be registered. Their “historical identity” would be gone.																																							
3	a	<p>Here is a covering letter/Letter of Transmittal about a firecracker factory accident. Use details in the letter and prepare an accident report as the Collector of the district submitting it to the Chief Minister of the state.</p> <p>Respected Sir</p> <p>A horrific accident took place in a firecracker factory on 04 April 2023 at around 12 noon in which lot many workers died, and many people got injured. The tremors of the explosion were felt in a vicinity of over 10 km.</p> <p>The coordinated work of the fire and rescue services as well as the police force brought the mishap under control after several hours.</p> <p>The dead and the injured people were all moved to the government and private hospitals in the area and an immediate relief of Rs. 5 lakh was released for the immediate kith and kin of those who died. An inquiry is also in place to find out about any violations in regulations.</p> <p>The enclosed accident report has all the details including the recommendations on how such accidents can be avoided in the future.</p> <p>With Regards</p> <p>Collector (Sd/-)</p>	7	CO4	KL6																																				
4	a	<p>Interpret in about 150 words the following chart about teens’ reporting on how often they use social media platforms.</p> <p>How Often Teens Say They Use Each Platform</p> <table border="1"> <thead> <tr> <th></th> <th>Almost constantly</th> <th>Several times a day</th> <th>About once a day</th> <th>Less often</th> <th>Don't use</th> </tr> </thead> <tbody> <tr> <td>YouTube</td> <td>19%</td> <td>41%</td> <td>17%</td> <td>18%</td> <td>5%</td> </tr> <tr> <td>TikTok</td> <td>16%</td> <td>32%</td> <td>9%</td> <td>9%</td> <td>33%</td> </tr> <tr> <td>Snapchat</td> <td>15%</td> <td>10%</td> <td>7%</td> <td>8%</td> <td>41%</td> </tr> <tr> <td>Instagram</td> <td>10%</td> <td>27%</td> <td>13%</td> <td>12%</td> <td>38%</td> </tr> <tr> <td>Facebook</td> <td>8%</td> <td>8%</td> <td>14%</td> <td></td> <td>67%</td> </tr> </tbody> </table> <p>Note: Among teens ages 13 to 17. Those who did not give an answer are not shown. Figures are rounded. • Source: Pew Research Center survey conducted April 14-May 4, 2022 • The New York Times</p>		Almost constantly	Several times a day	About once a day	Less often	Don't use	YouTube	19%	41%	17%	18%	5%	TikTok	16%	32%	9%	9%	33%	Snapchat	15%	10%	7%	8%	41%	Instagram	10%	27%	13%	12%	38%	Facebook	8%	8%	14%		67%	7	CO4	KL4
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5	a	Based on the following flowchart, describe the process of emergency department patients using single-tier triage system from the paramedic’s perspective. Diamonds: Decision points.	7	CO3 & 4	KL6																																				

		<div><div>Registration Process</div><div>Patient Arrival</div><div>Registration</div><div>Triage</div><div>Triage</div><div>A</div><div>Critical and semi-critical zone</div><div>Waiting Area</div><div>Treatment area</div><div>Non-critical zone</div><div>Consultation and treatment</div><div>Consultation and treatment</div><div>B</div><div>Disposition</div><div>Admission</div><div>Discharge</div><div>Transfer</div></div>							
6	a	<p>Convert the following sentences (about different fields within computer science) to passive voice without changing the meaning:</p> <p>i. Computer graphics and computational geometry address the generation of images.</p> <p>ii. Areas such as operating systems, networks and embedded systems investigate the principles and design behind complex systems.</p>	2	CO4	KL3				
7	a	<p>Change the phrases in brackets in the following sentences into numerical adjectives and fill in the blanks:</p> <p>i. We just moved from a small _____ to this large and comfortable villa. (apartment with two bedrooms)</p> <p>ii. The younger people enjoy the shorter format more than they relish _____. (a match that lasts fifty overs)</p> <p>iii. The college is _____ from her home in the city. (a drive that is two hours long)</p> <p>iv. Do you have _____ with you? I don't have much change. (a coin that is valued at Rs. Five)</p>	2	CO4	KL3				
8	a	<p>Write definitions for the four terms in the box after matching them with the details given below:</p> <table><tr><td>Algorithm</td><td>Data processing</td><td>Database</td><td>Cryptography</td></tr></table> <p>- collection and manipulation of digital data - produce meaningful information</p> <p>- the practice and study of techniques for secure communication in the presence of adversarial behaviour</p>	Algorithm	Data processing	Database	Cryptography	2	CO4	KL3
Algorithm	Data processing	Database	Cryptography						

		<ul style="list-style-type: none"> - a finite sequence - rigorous instructions - typically solve - class of specific problems or perform a computation - a structured set of data held in a computer, especially one that is accessible in various ways 			
9	a	<p>Choose the correct technical term/jargon from those given in the box to complete the sentences meaningfully:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">antivirus, bandwidth, cache, cloud, server, cookies, defrag, malware</div> <ol style="list-style-type: none"> Our user might be less aware that when she performs a Google search the results are retrieved from a _____. The eCommerce hosting account has been upgraded to allow 1 Gb of web space and provide 15 Gb of _____ per month. All the photographs are kept on the _____ rather than on hard drives. Many _____ vendors recommend that you perform a full system scan at least once a week. 	2	CO2 & 3	KL3
10	a	<p>Choose the correct verb (and form) from the box below in the following sentences to ensure correct subject-verb agreement:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">is/are, visit/visits, like/likes, differ/differs</div> <ol style="list-style-type: none"> One of my friends _____ to cook and eat Mughlai food. I agree that there _____ many reasons to disagree with political leaders. The number of students in each of the five BTech classes _____. Neither my aunt nor her children _____ hospitals when unwell. 	2	CO3 & 4	KL2
11	a	<p>Form compound words with the word HEAD and one other word and complete each sentence meaningfully.</p> <ol style="list-style-type: none"> Shortly after the surgical procedure, the patient reported a worsening of her _____. No one dips their _____ here, so you're constantly left dazzled while driving on this highway. The divisional managers have been called to a meeting at the company _____. For listening tests, the students answered questions in a lab setting, listening to a text through _____. 	2	CO2 & 3	KL5

KL – Bloom's Taxonomy Levels

(KL1: Remembering, KL2: Understanding, KL3: Applying, KL4: Analyzing, KL5: Evaluating, KL6: Creating)

CO – Course Outcomes
