

EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

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All the Best

3

WILL FRESH WATER SHORTAGES CAUSE
THE NEXT GREAT GLOBAL CRISIS.

Billions of years ago an amazing happening reshaped the earth feature. It was birth of life. Scientists claim that cyano bacteria was born inside water. Water is not only responsible for creation of life but also sustains. Water forms major constituent of human body. More importantly, fresh water is at the core of human sustenance and civilizations.

Great human civilizations like Indus valley civilization, Mesopotamia, Egyptian civilizations sustained and flourished due to Indus, Euphrates and Nile rivers respectively. Recognizing importance of fresh water, great visionaries like Napoleon, Chola kings prioritized water works like checks dams, etc.

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in these Empires. Pandit Nehru regarded dams as "temples of modern India". Sadly, God inside these temples is facing numerous issues now a days.

Recently, in Cape town of south Africa major water resources dried and reached almost near zero-day (a day with significantly low water for human needs). Lakes like Balkash, Victoria (Africa) and various lakes in Bangalore are getting depleted. Life sustaining rivers like Ganga, Nile are increasingly getting polluting. Climate change is threatening polar ice-caps.

on the other hand, human population is increasingly. Recent world water Development report paints dismal picture on fresh water availability. ^{Report} It warns that increasingly water shortage can bring tectonic shifts in social, Economic and political spheres. what is

causing fresh water shortages? If continued unabated will it cause ^{the} next global crisis? What solutions lie ahead for humanity to abate this threat?

Water is crying:

Growing population above the ecological capacity is setting various cascading effects that threatens fresh water. To meet food demands of huge population forests are being destroyed. Forest degradation will degrade catchment areas of many rivers, streams, lakes and deplete ground water tables. Growing urban areas with least concern for planning causes encroachment of flood plains of rivers, water plenty wetlands. Yamuna river encroachment, degradation of wetlands & water tables in capetown being few examples.

Fulfilling needs of populations requires

Industry. They provide humans with Jobs, social-capital and self-esteem. However, ~~an~~ irresponsible industrialization is causing pollution of water tables, rivers and lakes. Instances of Ganga, Thames and Nile pollution points out how irresponsible industry is threatening fresh-water. It causes ~~to~~ water itself. Not just causing pollution, but emissions from industry sets the phenomena of climate change.

Climate change is due to Green House Gas (GHG) emissions. climate change disturbs global and local hydrological cycle's like nothing else. According to Intergovernmental panel on climate change [IPCC]'s 4th assessment report sea-level rise will deplete fresh water sources. It occurs due to high-rates of evaporation, salinization of fresh water, change in rainfall pattern. Further, global commons like ice-caps with 62.3% share of global fresh water reserves

will melt. These events may set floods, droughts, desertification and may trigger inundation of snow island developing states. Apart from industry, we also need to examine role of individual and industry in causing fresh water shortages.

In many cultures (like Indian) water is revered as god. Vedas consider varuna as water god mandated to properly manage water. In modern ages due to consumerism and indiscriminate water use by individuals fresh water resources like ground water and rivers are being depleted. Earlier, water is managed by traditional manner like Johads, Kunds, Surangams across India are now almost disappearing. Poor due to low resources and information also pollutes fresh water (open defecation). These individual practices cause water shortage. More disturbingly, a recent report shows uranium ^{content} in water due to over drawing from ground water. individual

choices are exacerbated by policy also.

In various countries aquifers are not mapped properly. subsidies on irrigation, like in India also led to depletion of fresh water sources. More importantly water is not treated in wholesome. Fragmentation of water into surface water and groundwater misses the ecosystem and water cycle aspects.

LOOMING GREAT GLOBAL CRISIS

Aforementioned causes clearly shows fresh water sources are increasingly depleted. This can cause disturbing consequences. Even great Indus valley civilization is believed to end due to wrath of rivers, similarly current water shortages can cause global crisis and threaten whole humanity.

UN water reports throw light on such great crisis. Reports paints disturbing pictures such as future water wars,

water refugees, economic slowdown and heightening of poverty. For instance, many water resources are trans-national. Such as Indus, Brahmaputra, Nile, Euphrates, etc. Due to water shortage sharing of river water will invariably lead to conflicts among many countries. Especially for India, with Pakistan and China as adversaries, it is very disturbing to think of water wars.

Water wars among nuclear states will threaten whole humanity like never before. Water refugees would be other concern due to water shortage. Throughout history, water is guiding path for agriculture, industry and services. Climate change and water depletion will force people to migrate for food, water and jobs. Such migration will threaten demography of destination nations, puts burden on resources and can trigger huge conflicts. Already, such conflicts are experienced in Syria, Yemen,

Rothing you. Though these refugee crisis are because of conflicts (war, persecution) yet a water-refugee crisis will also have many fold consequences than present refugee crisis.

Migration occurs due to lack of water, but in search of jobs. But question is can economy sustain without jobs-water? Every economic activity from agriculture to services depends upon water. For example, no food will be produced without irrigation. Silicon chips, which are core of IT revolutions and current artificial intelligence can't be created without quality fresh water. Without food, without computers current globalization can't sustain. Effect of such condition will be much worse than great economic depression and more recent

Global Financial Crisis (2008).

Effects of water shortages will also consume political spheres. When small

Shortage of water in Cauvery can trigger political row between Tamil Nadu and Karnataka, we could only imagine what would happen if water shortage reaches dismal levels. Such political crisis will threaten nation's sovereignty and integrity. In international sphere, under influence of Realism nations may also choose to acquire new territories. This will set stage for great wars and geopolitical crisis.

Individual will face worst wrath in all above discussed crisis. S[HE] will be more impoverished, caught between work, lack of a job, etc. Mankind already lost millions of population due to famines, great water shortage will only lead to great population shortage. [wo]man will lose her favourite lake, river which she used to pray and play.

Fresh water shortages, hence, is happening because of social, economic and political causes. If allowed to happen with out due interventions, great global crisis will loom and may destroy humanity. It is high time to set the water depleting trends to a full stop.

Towards great solutions

Water must be preserved in all forms by adopting hydrological cycle approach. National and international organizations have to identify all aquifers, surface water sources. Utilizing LIDAR, Geographical-Information system [GIS] and earth observing satellites all depletions of water sources like rivers, ground water table, lakes and ice caps must be identified. Proper actions for their conservation like are needed. Here all

nations must act in spirit of SDG - Partnership for goals.

Technological innovations will be crucial in such goals. Desalination, waste-water management will improve fresh water availability. Even recent world-water development report talk for waste-water refinement. Here Israel desalination technology and Singapore NoWater (waste water refinement) will help.

At individual level, water must be used with great care. Traditional water management practices across the countries must be revived. It requires State's active incentives.

In India, Government took steps like Atal Bhujal yojana - Ground water management, National Rural Drinking water Project [NRDWP], Namam Ganga -

Cleaning river Ganga, An Krishi Sinchai
Vojama - micro irrigation promotion to
- Properly manage our fresh water sources.
Communities like Mr. Rajendra Singh - Tarun
Bhagat Sangh also complementing govern-
-ment efforts in managing fresh water.

At international level, hydrological data
sharing must be done in cooperative
manner. It will reduce conflict. (eg: between
India and china). We also need to plan
for adaption.

Water refugees crisis could only be abated
via UN system. UNFCCC, UN water,
UN Social and Economic Council, International
organization on migration must pull up
their shocks and plan for ~~the~~ abating
future crisis in the spirit of international
peace and security.

with adoption of sustainable Development Goals, Climate agreement in Paris world leaders have shown resolve to work cooperatively in preventing crisis. After Cape town & Shimla incidents of water shortage various efforts like Gps monitoring, water pricing etc are started. They show we are only moving positively with lessons learnt.

A thousand mile journey starts with single step. A step by individual, community, nation & international bodies will matter. Together we can march millions of miles to mitigate great global crisis. Let us show the resolve and take effective action in India and show the light to all other nations.

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ARTIFICIAL INTELLIGENCE HAS THE POWER
TO MAKE HUMAN INTELLIGENCE OBSOLETE

After waking up in the morning, you would like a immediate coffee. No problem, Internet of Thing [IoT] device will detect your timings and prepare a hot coffee for you. You need to prepare most optimized schedule for the day? ~~we~~ Let Apple's SIRI or Google's ASSISTANT do it for you. Bored of driving to office? We have Self-driving cars, flying taxis coming for you. At office you need to shortlist resumes? why not let a IT-bot do it for you more efficiently?

Above situations aren't from a Hollywood science-fiction movie. Thanks to Artificial intelligence, humans now have wide range of technologies at their disposal to get

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their tasks done in much efficient manner.
We are in the age of digital economy
and fourth industrial revolution [FIR],
where in artificial-intelligence is a
defining feature marking all aspects of
human life.

Artificial intelligence refers to machine
learning to make better decisions and thus
emulating human intelligence. Humans are
defined by their impeccable intelligence. From
making food from mud to launching
satellites to moon, human intelligence played
key role. It has ^{two} main components, one is
memory and other one is processing
power. Using these two humans use their
experience, knowledge to take better decisions.

This is why Homo Sapiens succeeded over
other animal species but now humans
are ^{not} competing with other animals, but a
human created machine and technologies.
which are seen to be far superior than

humans. why AI is being hailed all over?
can AI Surpass HI? or can we make
a balance between these? We will
try to analyse these questions in the
subsequent sections.

○ Captain My Captain - AI

Current changes in technologies has led to AI. Computing power is more easily available now than before. It is fuelled by large-data sets (BIG DATA) generated by growth in access to internet. Advancement in technologies like machine learning, deep neural networks [DNN] are facilitating humans to harness power of AI. In fact AI programmes are surpassing humans.

Alpha Go is a Chinese game. But a google AI bot defeated all-time champion in AlphaGo. This clearly shows that human's intelligence is challenged by AI. This

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is because, human have memory but they can't process billions of data like Big Data systems. AI can use parallel processing can solve problem using multiple computers, quantum computing and from multiple locations (cloud computing) simultaneously. But human intelligence doesn't have this luxury.

This is the reason why in USA IBM Watson [AI device] is solving more financial, legal cases. which is threatening jobs of professionals in their respective fields. This case clearly show how other humans (may be organizations or individuals) are relying more on AI than HI. AI brings accuracy and precision in decision making, which is not always possible with HI.

AI based precision agriculture will rely on climate data, soil conditions, market prices. which will choose a best possible crop supported by above empirical data. However

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It may go only by Minimum-Support
price or immediate human needs. That is
why in India we have crop glutters where
drought conditions prevail, we produce more
cereals while demand is more for pulses,
we use more chemicals which in turn
deplete soils. Whereas AI will not cause
above things, in turn its precise and accurate
decisions will lead to better farmer
incomes. That is why even NITI Aayog
started experiment in this field. Apart
from food security, AI will also impact
various social sectors.

AI based disease diagnosis is far
superior than a radiologist decisions. In fact,
in recent google experiment AI radiologist
exceeded more than 95% accuracy, which
is unimaginable for a single human. In case
of education, AI machine can bring more
personalized learning experience than a teacher.
In fact, China is using AI and virtual
reality to improve education. These instances
shows AI is better than HI in these regards.

Not just in social sectors, AI is also disrupting economical activities. Automation might become a norm in industry. Blockchain, cloud computing are already saw huge success (Bitcoin). IoT devices will improve interoperability among machines, thus smoothening manufacturing process. AI Robot will not rest like a human, AI robot won't form unions or take agitate. They will single handedly work for more goods and services. Due to reasons many industries are absorbing them, like General Motors, Infosys etc. This is also proved by World Economic Forum report, which said more than 60% jobs are threatened by AI. which shows AI is surpassing HI even in economy. Will AI can also surpass HI in politics?

Political parties across the world are now relying on AI to observe voting patterns. Social media data is aiding such expeditions. Even for policies and schemes, decisions are backed by Big data analysis.

For instance, in India Economic Survey,
CAG audits are heavily relying on AI
for efficient decisions. Earlier we used
to rely on hypothesis, claims and emotions.
With AI all these are changing. AI doesn't
leave any one, it affects all.

Human Entertainment arena is being
redefined by AI. We choose to go to movie
based on google assistant recommendations.
We listen to music because an app recom-
mends it based on our past listening
history. In fact we realize our cultural
preferences via AI. Isn't a case that
shows our HI is in fact depending on
AI more and more? Here we should
hold and think, can AI really make
HI obsolete? What will the consequences
of such situations? These questions
demand us to see other side of the
story.

All hail's to AI

AI isn't created by nature or by AI itself in first place. It is due to stupendous efforts of human creation. Right, from neolithic age to recent digital age AI is a treasure of innovation, knowledge creation and unstoppable machine of inquiry. Efforts of Indians in discovering zero, Europeans in geometry and Americans in innovation, etc have led to what is called age of AI. without AI there can't be AI.

AI needs huge data sets. though in future AI can create data itself, but it is far fetched proposition. Human choice creates data. we choose a music because it suits us, we choose a movie because we love story, AI just helps us to discovering more such movies/music/food but not in creating our choice in first place. But, one can also argue that AI

Will drive human choices. It is possible in the age of social media and deep learning. However, rational humans will always apply their discretion, beliefs, faith in choosing what they want, not because AI wants them to have it. That it is AI not AI that influences human actions ultimately.

Humans can run complex social relations. We are humans, Indians, Bengalis, Tamilians, Hindus, Muslims & so on and so forth. These relations are based on values, ethics, beliefs and our behaviour. Through such relations humans create social, economical and cultural capital. Can AI supercede this form of intelligence of humans? Definitely a big no. It requires humans to create language, art, food, architecture marvel. AI may aid in them by providing better insights, but AI will ultimately rule.

Humans also face various crisis. It is well known that AI works best during

crisis movement. For instance, recent Thailand cave rescue exercise involved best of mind, organizations across the world. If we leave such crisis to be managed by AI robots what will they do? Can they feel suffering of fellow human being? Or they will weigh cost-benefits to decide that rescue missions are blatantly costly affair? We can't rely on AI, that's always. We can't put AI on nuclear bomb decisions or missile launchers. Because AI will work for peace though it may be harmful in short runs. AI can't do that.

Politics now a days may be influenced by AI but AI can't replace HI in politics. Can AI produce affirmative actions based legislations? Can AI provide loan waivers by seeing farmer suicide? Various human aspects are

taken by HI in farming policies. some Populistic, some more efficient. policies itself very complex. AI may aid them but can't make HI fully obsolete.

Whatever political thinkers thought is not because of previous data but because of critical thinking and imagination. Like Gandhiji on non-violence, John Rawls on Justice, Voltaire on reason. Can AI will produce such original thoughts which are rebel during their time? Can AI produce American revolution, French revolution or August revolution in India? May be not Human imagination is what enabled missions to mail or 3D printing. Now it is era of AI, may be in future some other era may come. Such era's are always shaped by HI rather than AI.

We also have to see that all that

of AI is not good. Some google images identified Africans to guerillas (sadly), a MIT study shows a robot fed with stereotyped data can become rogue and could damage humanity. Innovators like Elon musk argued that AI will damage humanity, though mark zuckerberg countering him. Hence to evade negative threat from AI, it is HI which should guard and protect us from any possible negative consequences of AI.

AI and HI, what's ahead

Humanity has to move with a calibrated approach. We must use AI wherever possible, it has significant benefit. Recent NITI AI strategy report shows if we adopt AI there can be 15% Gross value addition by 2030. It also identified Education, health, agriculture,

Urban mobility, infrastructure as priority sectors. All these are right steps, we must say.

Simultaneously, citizen's digital literacy must be improved. Their data and privacy (Fundamental right after KS puttalwamy) must be jealously protected. So their decisions are left to themselves.

Forum like World Economic Forum, Innovation & Entrepreneurship Summit will play key role in shaping policies on AI. In sum, retaining all good and removing ~~trying~~ (trying to) bad must define AI policies internationally. Skilling is one are every country must focus on to deal with transient job loss due to AI. For retrenched people, Government support and social support will enable them to keep their self-esteem.

AI faced threats one after another right from ^{first} industrial revolutions. Rather than becoming concerned about AI, we must celebrate the rise of new human age where AI will aid all of us to lead new life which is filled with exciting technologies. We must harness AI to eliminate poverty from humanity once for all. AI must be used to bring peace and prosperity. AI must put us on higher echelons on human achievement and direct humanity towards epitome of Justice.

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Artificial intelligence

Human intelligence

Definition

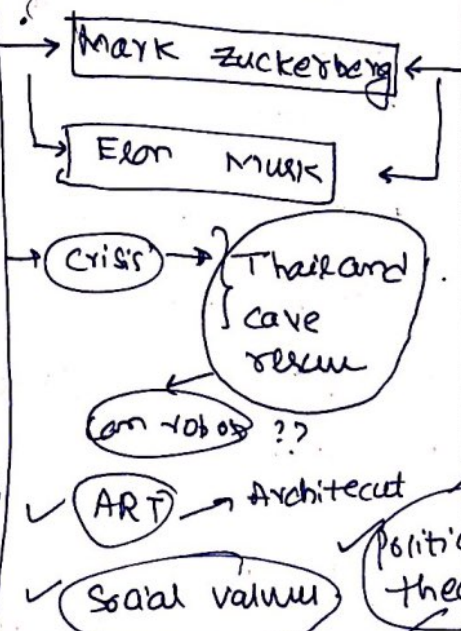
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Definition

✓ Sophia robot } Introduction
✓ SIRI

- ✓ Google Assistant
- ✓ Code → machine learning
- ✓ Alpha - Go game
- ✓ IBM - Watson
- ✓ Google Emails
- ✓ Self driving cars
- ✓ Disease diagnosis
- ✓ Precision agriculture
- ✓ Automation and robotics
- ✓ Lawyer → Justice DNA
- ✓ Robo → cop
- ✓ (Legislation)
- ✓ Big data
- ✓ Cloud storage, super computers, Blockchain
- ✓ IoT

- Emotions,
- Ethics, values
- Creator of knowledge
- High skilled Jobs
- MIT study
↳ Rougem
- ~~Harvard~~ Google: (Guerrilla) (Africane)



relation
language
Food habite
Consumer Power
Peace
welfare scheme
lawe
Revolution

