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SUBJECT:	ESSAY	Test Code:	1253
Name of Candidate	ANIRUDHA PANDEY		
Medium Hindi/Eng.	ENGLISH	Registration Number	108343
Center	ONLINE	Date	16 12 18

INDEX TABLE

Q. No.	Page No.	Maximum Marks	Marks Obtained

Total Marks Obtained:

Remarks :

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. All questions are compulsory.
   सभी प्रश्न अनिवार्य हैं।
3. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
4. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
5. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
6. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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IS INDIA'S HIGHER EDUCATION SYSTEM FUTURE READY ?

When Ankit Verma started his B.Tech degree, he had high hopes of future. He had dreamt of making it big in the corporate world. After completing his degree he has been left disillusioned as employment opportunities have been hard to come by.

Amit Namdev is a manager at a leading automotive firm. His company faces an acute shortage of skilled labour. The problem is so serious, it has forced the company to relocate to South Korea, where ~~sk~~ cheap skilled labour is abundantly available.

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The above situation reveals a double paradox. On one hand youth with higher education are unable to find suitable jobs. On the other hand, firms are unable to find a suitable workforce. ~~This raises~~

This raises serious questions about future readiness of india's higher education system. So how did the higher education system in india evolve? Is it future ready? What are the challenges that it faces? Can these challenges be overcome? if yes, How?

Evolution of India's Higher Education

In ancient times india was the 'golden bird', the most prosperous country in the world.

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In those times india also had the most advanced higher education system with universities such as Taxila, Nalanda.

In medieval times, higher education in india declined. stagnation in higher education meant we lagged behind in science of navigation, and machine making or weapon manufacturing. This paved the way for british conquest.

During the british period, focus of higher education was merely to fill clerical posts and create loyaliets.

The lesson from the past is clear: the status of higher education mirrors the status

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of the nation. Foundation of great nations is built upon a robust higher education system. So how future ready is india's higher education system?

Future readiness of Higher Education: The bright spots

India has the largest higher education system in the world with over 70 universities and 40,000 colleges. It is also the second largest in terms of student enrolment with over 35 million students. Keeping in mind india's large population, the size of higher education system is appropriate and ready for future

Moreover, India's higher education sector is socially inclusive. Reservations for SC/ST, Disabled,

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girls and special institutions for religious minorities have made india's higher education system truly representative.

The best proof of India's Future readiness of Higher education comes when we look abroad. CEO's of leading firms such as Microsoft (satya Nadella) & Google (sundar Pichai) pursued their undergraduate degrees in india. India has also been able to produce world class institutions such as IITs, IIMs, NITs & IISc.

However, this is just one side of the coin. India's higher education is plagued by many problems & challenges which raise serious questions about it's future readiness.

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Future readiness of India's higher education: threats & challenges

Economic factors The future belongs to technologies such as Artificial Intelligence (A.I), Machine learning, Internet of things, Big data etc. To be future ready, india's higher education system should be pioneering in these fields However, the situation is far from ideal. India's share in international research publications in the field of A.I is merely 1.5%. It is loosing ground to China & USA.

Moreover, india has a youthful population. 10 million new workers enter the work force every year. India's higher education system is not well-equipped to provide skilling & Quality education to such a large population.

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Funding of higher education remains a major problem. India spend's 4% of it's GDP on education. However most of it is diverted towards primary & secondary education, leaving higher education cash starved.

In social sphere, higher education institutes tend to be located in cities, indicating a rural-urban bias. Moreover, high fees of higher education, especially professional courses puts it out of the reach of poorer sections.

In political sphere India's Gross enrolment ratio (GER) is 26% in higher education. This is in stark contrast to GER of 95% for primary education. To improve the GER, one of the ways suggested by many

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is to make Higher Education a F.R under A-21A just like primary education.

Higher education also faces governance & regulatory issues. India's higher education stresses more on rote learning rather than critical thinking. This has led to deterioration of quality. As a result, no indian university finds a place in top 200 universities of the world in the QS Rankings.

Moreover ~~these~~ regulatory bodies such as UGC, MCI have been mired with allegations of corruption, political interference and bias.

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Making india's higher education system future ready : The Road Ahead

Providing autonomy, funding support and inducing a competitive spirit is necessary to make higher education future ready. The Government has realised this and launched schemes such as Institutions of Eminence (IoE), Graded autonomy and NIRF Rankings.

Regulatory reforms such as replacing UGC with HECI, MCI with NMC are steps in the right directions. Further reforms in the form of allowing foreign universities to set-up campuses in india, attracting foreign students through schemes such as 'study in india' and hiring foreign faculties on permanent basis are welcome.

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These reforms can make india's higher Education system truly global & future ready.

Taking lead in emerging technologies such as A.I, solar, e-vehicles is key to Future readiness of Higher education. India can learn from US's example where seperate schools for AI have been set-up (e.g → in harward)

Gandhiji Dreamed of a new india. The foundation of new india has to rest on a future ready higher education system. To acheive this goals, the government, institutions, industry, students and citizens will have to work hand in hand.

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SECTION- B

DATA IS THE OIL OF 21st CENTURY: THE RAW MATERIAL THAT MODERN CIVILISATIONS ARE INCREASINGLY BUILT ON.

Tools helped man make a transition from hunters & gatherers to permanent settlement. These tools made from stone, bronze, iron became the most valuable resource to mankind. During the medieval period, crops, needed to feed increasing populations, replaced tools as the most important resource. With the dawn of industrial revolution coal became the most valuable resource. In 20th century, oil replaced coal as the most valuable resource with wealth of nations founded on oil. Now in 21st century oil has slowly but surely been dethroned by Data.

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~~Today~~ Today Data has emerged as the most important resource. This is validated by the fact that largest companies in the world such as Apple, Amazon, Google, Facebook, Microsoft all ~~use~~ use the same raw material – "Data". The valuation each of these companies is around $1 trillion – more than GDP of most nations.

So, How did this transformation come about? What is the importance of data? How it has become the new oil? What are the associated threats & challenges and How to deal with them?

DATA : THE NEW OIL

'Data is the new oil' was first coined by UK economist Clive Humby. WEF in a report in 2011

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acknowledged data as the new oil and called for treating it as an economic asset.

Emergence of data as the new oil is closely linked with the emergence of technologies such as A.I., Machine learning, IOT, Big Data. These technologies perform intelligent tasks such as decision making, problem solving, speech recognition, language translation etc.

However to perform these tasks, these technologies need a raw material - "Data". Computer programs learn from data. The more the data the better the performance. Hence these technologies are data guzzlers.

The importance of data is not limited to technolgical sphere, it spans across economic, social political, Governance, finance & cybersecurity etc

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In economic sphere, Data has the potential of transforming the very nature of economy. In a report, NITI Aayog envisons indian economy as data driven and technology based which can act as "AI garage of the world".

Data driven tech. such as A.I has applications in health, education, agriculture, finance, transport & infrastructure.

For ex → consider agriculture where fertilisers & pesticides are applied to the field automatically by taking into account the climate, weather conditions, soil moisture, nutrients etc.

In social sphere, Data collection can help in better targeting and checking leakages.

For ex → use of aadhar for welfare schemes along with DBT has saved the govt 50000 crore.

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Utility of aadhar in social welfare prompted the SC to uphold it's validity even amid privacy concerns.

In Political sphere, Data has a huge role to Play. For ex → consider cambridge analytica scandal where Data of 50 million facebook users was used by cambridge analytica to create voter profiles. These profiles were used by Trump campaign in 2016 for targeted advertising. Many experts believed that this tilted the balance decisively in trump's favour.

Also, privacy concerns regarding data collection create a political challenge. SC of India in Puttaswamy case ruled that Right to privacy is an integral part of Right to life under A-21 of the constitution.

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Data also has a huge role to play in good governance. Data collection & Big data analysis has succesfully been used in india for evidence based policy making.

RBI issued a circular mandating data localisation for all firms storing financial data of indian citizens. This highlights the importance of data in finance & cyber security sphere.

Data is also important for internal security. India's extensive satellite program NavIC is for data collection. This data is then used to provide exact locations and help track suspective & illegal movements on borders.

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HANDLING DATA: THREATS AND CHALLENGES

India has 50 crore internet users. Hence if Data is the new oil, india is the new middle east. But 8 out of 10 most accessed websites from india ~~has~~ are american. This creates twin problems.

First, control over such huge quantity of data gives immense power. This power is often used by companies to kill competition and establish monopoly.

For ex. → EU fined goggle $5 billion for trying to kill competition as android favours google's search engine over others.

Second, these companies store data of indian citizens in servers abroad. Hence data of indian citizens gets out of

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india's jurisdiction

Another major challenge is shortage of skilled proffessionals and lack of a data collection infrastructure. First, the ~~gov~~ data collection by government agencies is poor. secondly, even the data which is collected is not digitised. This creates serious impediments for start-ups, companies in the A.I industry.

Moreover, there are serious concerns regarding privacy, spread of fake news, mob vigilantism, misuse of data by criminal elements, right to be forgotten etc.

THE ROAD AHEAD

If data is the new oil, it is high time we started treating it as a strategic national resource. The focus has to be on

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regulation & data localisation, rather than allowing free flow. Justice BN Srikrishna committee's report on personal data protection provides key guidelines. lessons can also be learnt from general data protection regulations of the EU and protection of personal information law of Japan.

Moreover, govt. support to indigenous industry in the field of data collection is crucial. Lessons can be learnt from China, where govt. support has helped in emergence of technology giants such as Alibaba, tencent, Baidu, Huawei. Today China has a lead over USA in A.I.

For this to happen the first step is to set-up a robust data collection framework.

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Big Data Policy (2016), National Data sharing and accessibility policy (2012) and Digital Data bank are steps in the right direction.

International co-operation e.g with USA through CLOUD Act which allows american tech. companies to share data with foreign govt. is also needed.

Hence importance of data cuts across sectors such as economic, social, political, finance, security etc and affects the whole spectrum from govt. to industries to farmers, poors and ordinary citizen. Keeping in mind it's immense importance, there's a need for india to take a lead in harnessing, protecting & preserving data.

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Is india's higher Education System future Ready?

Story → Double Paradox.

Questions →

evolution → taxila & Nalanda → decline → British → Govt.

→ status of HE mimics stature of the country.

future ready → Bright Spots. → Social inclusion → reservations for girls, disabled, religious minorities.

→ largest → 35 million students. 70 univ, 40000 colleges 20,000

→ Satya Nadella, Sundar Pichai.

→ most MNC's hiring.

→ IIT, IIM, NITs → globally recognized.

→ MOOC's.

future ready → challenges.

tech → ① → 4th IR → future tech → IOT, BD, ML → 15% publication. sensors, e-vehicles etc.

Economic → funding ② infra, equipments, → 4% of GDP but mostly conc. in primary, secondary

③ R&D → 0.7%. China, US → 2%. STI Policy 2013 → 2%. pvt. sector + subsidies

→ Demography → 10 million added to workforce every year

② skilling, Job finding difficult.

→ industry – academia linkage → curriculum → R&D spend 55%.

Social → ① debate, deliberations → gender equality, elders.

② → caste, communalism

→ ~~remove poverty~~.

① → enrolment → 26%, primary → 95%. → poor not getting change

③ location → regional imbalances.

Political → awareness about JLEF, FR, FD.

→ cleansing of Politics by making electorates aware.

Governance → QUALITY → QS Rankings.

Curriculum → rote learning → Einstein → "Education is what remains after one forgets" "

→ teacher training → TEQIP → foreign faculty → IITs allowed

→ foreign univ. →

→ Civil Services Rules.

ethics → corruption perception index → 78 → Aristotle → Integrity without knowledge.

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Brain drain → Reservation → ~~class~~ SC/ST, Religious minorities, Girls, LGBTQ.

Way forward → IoE, Graded Autonomy, NIRF

IMPRESS SPARC, RUSK.

~~HE~~ Regulatory → HECI replacing UGC.

Foreign faculties in IITs.

Social justice → gender (UDAAN), location,

conclusion

New India → foundation can only be laid on a future ready ~~robust~~ HE system → All stakeholders should contribute to fulfil the vision.

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DATA IS THE NEW OIL.

tools → agri → spices → coal → oil → Data

validated by the fact that largest companies are all data based.

→ over $100billion profit > GDP of many countries.

→ Apple's valuati → $1trillion.

~~How did~~ the transformation

→ need → always. capacity → limited → increased with advance in tech. → we realised utility of data → AI, IOT, BD, Automati, ML. → benefits.

5 exabyte till 2000, now in 10 min.

~~importance~~ → ~~economic~~ → Clive Humby, WEF Report 2011

data an economic asset.

importance.

economic → NITI Aayog → AI garage → health, agri, trans, infra edu etc.

business → Decision making, problem solving.

entrepreneurship → not only beneficial but necessary jobs. contrary to popular belief.

→ competitiveness.

social → Aadhar → SC judgement → DBT 50000 crore.

→ NSSO. (Fighting crime).

Governance → Losses → Discoms } Big Data.
EBPM →

Politics → Cambridge analytica → US elections → voter profiling.

→ Data → privacy → A-21 → BN Srikrishna

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finance & cyber security → BN Srikrishna, RBI Circular } Data localisation -

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