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B. C. A. (Second Year) Annual Open Book Examination, 2021

GROUP-I

नोट : प्रत्येक खण्ड को पृथक्-पृथक् उत्तर-पुस्तिका में लिखना अनिवार्य है।

Note: *Each section is compulsorily written on separate answer sheet.*

A-721

Paper : BCA-21

DATA STRUCTURE using C++

Maximum Marks : 40

Note: *Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 words.*

1. What do you understand by Dynamic allocation of operators? Discuss in the light of examples related to the array and pointer references.

2. What do you understand by Parameterized Constructor? How is it implemented? Explain also discuss an example of multiple constructor in a class.

3. Write a C++ program to implement single inheritance with public access specific.

4. Write an algorithm to convert an Infix expression into postfix expression and also explain that how following infix expression will be converted into postfix expression using stack :

A + (B * C – D/E) – (F + G * H)

5. Write notes on any **two** of the following :

(i) Collision Resolution Techniques

(ii) Time Complexity of Quick Sort Algorithm

(iii) Applications of Binary Tree

(iv) Representation of Graphs

A-722

Section-'A'

Paper : BCA-22

DBMS & RDBMS

Maximum Marks : 40 (Regular)

Note: *All questions are compulsory. All question carries equal marks. Each question must be answered in maximum 800 words.*

1. Write the difference between database approach and traditional file accessing approach.
2. Write the importance of constraints. Explain entity integrity and referential integrity constraints.
3. Discuss about the history of SQL. Write down the any three SQL statement with logical operator.
4. What do you understand by distributed database? How to apply protection, security and integrity constraints over distributed database?
5. Explain the Acid properties of transaction. Write short note on commit and roll back.

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GROUP-II

नोट : *प्रत्येक खण्ड को पृथक्-पृथक् उत्तर-पुस्तिका में लिखना अनिवार्य है।*

Note: *Each section is compulsorily written on separate answer sheet.*

A-723

Paper : BCA-23

INTERNET and E-COMMERCE

Maximum Marks : 40

नोट : *सभी प्रश्न अनिवार्य हैं। सभी प्रश्नों के अंक समान हैं। प्रत्येक प्रश्न के उत्तर अधिकतम 800 शब्दों में दें।*

Note: *Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 words.*

1. निम्न को समझाइए : (कोई **दो**)

Explain the following : (any **two**)

(a) URL

(b) Search engine

(c) Portal

2. निम्न HTML tags को उदाहरण सहित समझाइए—

Explain the following HTML tags with example :

(a) < body >

(b) < br >

(c) < img >

(d) < form >

(e) < li >

3. संक्षिप्त टिप्पणी लिखिए : (कोई **दो**)

Write short notes on : (any **two**)

(a) HTML editor

(b) FTP software

(c) Frames

4. निम्न को समझाइए : (कोई **दो**)

Explain the following : (any **two**)

(a) Alert Box

(b) Javascript comment

(c) Prompt

5. E-Commerce के लाभ व हानियाँ लिखिए। E-Commerce में technology से आप क्या समझते हैं ?

Write the advantages and disadvantages of E-Commerce. What do you mean by technology in E-Commerce?

A-724

Paper : BCA-24

DATA COMMUNICATION and COMPUTER NETWORKS

Maximum Marks : 40

Note: *Attempt all questions. All questions carry equal marks. Each question must be answered in maximum 800 words.*

1. What do you understand by Data Communication? discuss any model of communication in order to explain the communication process.

2. What type of errors can be detected by Parity Check Code? How is it implemented? Explain with a suitable example.

3. Explain the working principle of Sliding Window Protocol with their efficiency.

4. Discuss with the help of a figure the frame structure of IEEE 802.5.

5. Write note on any **two** of the following :

(i) Communication Network

(ii) Encryption and Decryption Techniques

(iii) Least Cost Routing Algorithm

(iv) Internet and Intranet

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GROUP-III

नोट : *प्रत्येक खण्ड को पृथक्-पृथक् उत्तर-पुस्तिका में लिखना अनिवार्य है।*

Note: *Each section is compulsorily written on separate answer sheet.*

A-725

Paper : BCA-25

SYSTEMS ANALYSIS DESIGN & SOFTWARE ENGINEERING

Maximum Marks : 40

नोट : *सभी प्रश्न अनिवार्य हैं। सभी प्रश्नों के अंक समान हैं। प्रत्येक प्रश्न के उत्तर अधिकतम 800 शब्दों में दें।*

Note: *Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 words.*

1. Cost/Benefit Analysis को उदाहरण सहित विस्तार से समझाइए।

Explain Cost/Benefit Analysis in detail with example.

2. Structured analysis के tools को उदाहरण सहित समझाइए।

Explain the tools of Structured analysis with examples.

3. संक्षिप्त टिप्पणी लिखिये : (कोई **दो**)

Write short notes on : (any **two**)

(a) System Audit

(b) Quality Assurance

(c) Threat and Risk Analysis

4. निम्न को समझाइए : (कोई **दो**)

Explain the following : (any **two**)

(a) Linear Sequential Model

(b) Incremental Model

(c) RAD Model

5. संक्षिप्त टिप्पणी लिखिये : (कोई **दो**)

Write short notes on : (any **two**)

(a) Integration Testing

(b) Validation Testing

(c) System Testing

A-726

Paper : BCA-26

MANAGERIAL ECONOMICS and MANAGEMENT INFORMATION SYSTEM

Maximum Marks : 40

नोट : *सभी प्रश्न अनिवार्य हैं। सभी प्रश्नों के अंक समान हैं। प्रत्येक प्रश्न के उत्तर अधिकतम 800 शब्दों में दें।*

Note: *Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 words.*

1. ''वृहद् अर्थशास्त्र'' (व्यापक अर्थशास्त्र) में किन कारकों की भूमिका प्रासंगिक है? समझाइए।

Which factors are relevant in "Macro Economics"? Explain..

2. ''आगत-निर्गत विश्लेषण'' पर एक टिप्पणी लिखिए।

Write a note on "Input-Outpu Analysis".

3. प्रबन्ध के मुख्य कार्यों को लिखिए।

Describe the management functions.

4. विपणन सूचना प्रणाली पर एक वृहद् टिप्पणी लिखिए।

Write a comprehensive note on Marketing Information System.

5. उच्चतर प्रबन्ध सूचना प्रणाली की आवश्यकता को समझाइए।

Explain the need of Advanced MIS.

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GROUP-IV

नोट : *प्रत्येक खण्ड को पृथक्-पृथक् उत्तर-पुस्तिका में लिखना अनिवार्य है।*

Note: *Each section is compulsorily written on separate answer sheet.*

A-727

Paper : BCA-27.1

HINDI LANGUAGE & MORAL VALUES

Maximum Marks : 30

नोट : *सभी प्रश्न अनिवार्य हैं। सभी प्रश्नों के अंक समान हैं। प्रत्येक प्रश्न के उत्तर अधिकतम 800 शब्दों में दें।*

1. 'चीफ की दावत' कहानी की कथावस्तु को बताइये।

2. निबन्ध के तत्त्वों के आधार पर 'चली फगुनाहट बौरे आम' निबन्ध की समीक्षा कीजिए।

3. 'सपनों की उड़ान' निबन्ध की प्रासंगिकता पर प्रकाश डालिए।

4. आपके जीवन में ''सादगी'' का क्या महत्त्व है? उल्लेख कीजिए।

5. ''शिकागो व्याख्यान'' से आपको क्या प्रेरणा मिली? बताइये।

A-728

Paper : BCA-27.2

ENGLISH LANGUAGE

Maximum Marks : 30

Note: *Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 words.*

1. Write an essay on any **one** of the following topics :

(i) Social Networking

(ii) Digital Education

(iii) Women Empowerment

2. Write an application to the registrar of your university to issue your migration certificate, since you have to take admission in some other place.

3. Translate the following passage from English to Hindi :

The Indian civilization has always been based on religious and moral values. Herein lays its unity and strength. Indian culture has remained alive and dynamic because it has always been tolerant of different cultures. It imbibed the good qualities of other cultures and constantly upgraded itself. Influence of various cultures has made it rich and vibrant. Significant contribution have been made to it by the Dravadians, Aryans, Greeks, Persians, Arabs, Mughals and Europeans.

4. What is the purpose of a C.V. and what are the common mistakes to avoid while writing a CV.

5. What does the poet mean by 'Whispering of leaves would go silent'.

A-729

Paper : Third (BCA-27.3)

ENVIRONMENTAL STUDIES

Maximum Marks : 25

नोट : *सभी प्रश्न अनिवार्य हैं। सभी प्रश्नों के अंक समान हैं। प्रत्येक प्रश्न के उत्तर अधिकतम 800 शब्दों में दें।*

Note: *Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 words.*

1. पारिस्थितिकी को परिभाषित कीजिए तथा इसके घटकों का वर्णन कीजिए।

Define Ecosystem and describe its components.

2. वायु प्रदूषण के कारणों तथा मानव स्वास्थ्य पर इसके प्रभाव का वर्णन कीजिए।

Describe causes of air pollution and its effect on human health.

3. वन संसाधन की संरक्षण तथा समस्याओं को समझाइये।

Explain Forest resource conservation and problem.

4. जैव विविधता के मूल्यों का वर्णन कीजिए।

Describe the values of Bio-diversity.

5. वन्य जीवन संरक्षण अधिनियम को विस्तार में समझाइये।

Explain Wild Life Conservation Laws.

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(Bridge Maths)

A-730

BRIDGE COURSE in MATHEMATICS-II

Maximum Marks : 50

नोट : *सभी प्रश्न अनिवार्य हैं। सभी प्रश्नों के अंक समान हैं। प्रत्येक प्रश्न के उत्तर अधिकतम 800 शब्दों में दें।*

Note: *Attempt all questions. Each question carries equal marks. Each question must be answered in maximum 800 words.*

1. सिद्ध कीजिए—

$$\sin 105^\circ + \cos 105^\circ = \cos 45^\circ$$

Prove that :

$$\sin 105^\circ + \cos 105^\circ = \cos 45^\circ$$

2. दर्शाइये कि बिन्दु (12, 8) (–2, 6) तथा (6, 0) किसी समकोण त्रिभुज के बिन्दु हैं।

Show that the points (12, 8) (–2, 6) and (6, 0) are the vertices of a right angled triangle.

3. उस दीर्घवृत्त का समीकरण ज्ञात कीजिए जिसका केन्द्र (0, 0) पर है तथा जो बिन्दु (–3, 1) तथा (2, –2) से गुजरता है।

Find the equation of ellipse whose centre is at the origin (0, 0) and which passes through the points (–3, 1) and (2, –2).

4.सिद्ध कीजिए—

$$\tan^{-1}\left(\frac{3}{4}\right)+\tan^{-1}\left(\frac{3}{5}\right)+\tan^{-1}\left(\frac{8}{19}\right)=\frac{\pi}{4}$$

Prove that :

$$\tan^{-1}\left(\frac{3}{4}\right)+\tan^{-1}\left(\frac{3}{5}\right)+\tan^{-1}\left(\frac{8}{19}\right)=\frac{\pi}{4}$$

5. सिद्ध कीजिए—

$$\left(1+\frac{1}{n}\right)^n = e$$

Prove that :

$$\left(1+\frac{1}{n}\right)^n = e$$