BCA

SEDF – 201

II Semester All U.G. Courses Degree Examination, August/September 2023
(NEP – Freshers and Repeaters)
COMPUTER SCIENCE
Digital Fluency

Time : 1½ Hours

Max. Marks : 30

Instructions : *1) Questions are given **both** in **English** and **Kannada**.*
*2) Students can write either **completely** in **English** or **completely** in **Kannada** Language.*
*3) Answer **both** Part – **A** and Part – **B**.*

PART – A

ಭಾಗ - ಎ

I. Answer **any 5** of the following. **Each** question carries **2** marks. **(2×5=10)**
ಈ ಕೆಳಗಿನ ಯಾವುದಾದರೂ **5**ಕ್ಕೆ ಉತ್ತರಿಸಿ. ಪ್ರತಿ ಪ್ರಶ್ನೆಯು **2** ಅಂಕಗಳನ್ನು ಹೊಂದಿರುತ್ತದೆ.

1) What is Database ?
ಡೇಟಾಬೆಸ್ ಎಂದರೇನು ?

2) What is Deep Learning ?
ಆಳವಾದ ಕಲಿಕೆ ಎಂದರೇನು ?

3) Write any two types of Cyber Attack.
ಸೈಬರ್ ದಾಳಿಯ ಯಾವುದಾದರೂ ಎರಡು ವಿಧಾನಗಳನ್ನು ಬರೆಯಿರಿ.

4) Define IOT.
ಐಒಟಿಯನ್ನು ವ್ಯಾಖ್ಯಾನಿಸಿ.

5) What is Cloud Computing ?
ಕ್ಲೌಡ್ ಕಂಪ್ಯೂಟಿಂಗ್ ಎಂದರೇನು ?

6) What is an Online Learning Tool ?
ಆನ್‌ಲೈನ್ ಕಲಿಕೆಯ ಸಾಧನ ಎಂದರೇನು ?

P.T.O.

7) Define critical thinking.
ವಿಮರ್ಶಾತ್ಮಕ ಚಿಂತನೆಯನ್ನು ವ್ಯಾಖ್ಯಾನಿಸಿ.

8) What is Effective Communication Skills ?
ಸಂವಹನ ಕೌಶಲ್ಯಗಳ ಪರಿಣಾಮ ಎಂದರೇನು ?

PART – B
ಭಾಗ - ಬಿ

II. Answer **any 5** of the following. **Each** question carries **4** marks. **(4×5=20)**
ಈ ಕೆಳಗಿನ ಯಾವುದಾದರೂ **5** ಕ್ಕೆ ಉತ್ತರಿಸಿ. **ಪ್ರತಿ ಪ್ರಶ್ನೆಯು 4** ಅಂಕಗಳನ್ನು ಹೊಂದಿರುತ್ತದೆ.

9) Write a note on IIOT.
ಐಐಓಟಿಯನ್ನು ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

10) Explain in detail machine learning.
ಯಂತ್ರ ಕಲಿಕೆಯನ್ನು ವಿವರಿಸಿ.

11) Explain cloud computing and its service models.
ಕ್ಲೌಡ್ ಕಂಪ್ಯೂಟಿಂಗ್ ಮತ್ತು ಅದರ ಸೇವಾ ಮಾದರಿಗಳನ್ನು ವಿವರಿಸಿ.

12) Explain applications of AI in health care.
ಆರೋಗ್ಯ ರಕ್ಷಣೆ ಕ್ಷೇತ್ರದಲ್ಲಿ ಕೃತಕ ಬುದ್ಧಿವಂತಿಕೆ ಉಪಯೋಗಗಳನ್ನು ವಿವರಿಸಿ.

13) Write a note on applications of IOT.
ಐಓಟಿ ಆಪ್ಲಿಕೇಶನ್‌ಗಳ ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

14) Explain big data analytics.
ದೊಡ್ಡ ಡೇಟಾ ವಿಶ್ಲೇಷಣೆ ಬಗ್ಗೆ ವಿವರಿಸಿ.

15) Write a note on design thinking.
ವಿನ್ಯಾಸ ಚಿಂತನೆಯನ್ನು ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

16) Write a note on team work skills.
ತಂಡದ ಕೆಲಸದ ಕೌಶಲ್ಯಗಳ ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

SEEV – 201

II Semester All U.G. Courses Examination, August/September 2023
(NEP – Freshers and Repeaters)
ENVIRONMENTAL SCIENCE (AECC)
Environmental Studies

Time : 1½ Hours | Max. Marks : 30

Instruction : *Draw diagrams **wherever** necessary.*
ಅಗತ್ಯವಿದ್ದೆಡೆ *ಚಿತ್ರಗಳನ್ನು ಬಿಡಿಸಿ.*

PART – A
ಭಾಗ - ಎ

I. Answer **any 5** of the following : **(2×5=10)**
ಕೆಳಗಿನ ಯಾವುದಾದರೂ **5** ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ :

1) Euthrophication
ಯುಥ್ರೋಫಿಕೇಷನ್

2) Hot Spot
ಬಿಸಿ ತಾಣ

3) Smog
ಸ್ಮಾಗ್

4) Over grazing
ಅತಿಯಾಗಿ ಮೇಯಿಸುವಿಕೆ

5) Estuary
ಅಳಿವೆ

6) Land slides
ಭೂ ಕುಸಿತ

7) Incineration.
ಭಸ್ಮೀಕರಣ.

P.T.O.

PART – B

ಭಾಗ - ಬಿ

II. Answer **any 4** of the following : **(5×4=20)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ **4** ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ :

8) Write the scope and importance of Environmental studies.
ಪರಿಸರ ಅಧ್ಯಯನದ ವ್ಯಾಪ್ತಿ ಮತ್ತು ಪ್ರಾಮುಖ್ಯತೆಯನ್ನು ಬರೆಯಿರಿ.

9) Explain the effects of use of chemical fertilizers and pesticides.
ರಸಾಯನಿಕ ಗೊಬ್ಬರಗಳು ಮತ್ತು ರೋಗನಾಶಕಗಳ ಬಳಕೆಯ ಪರಿಣಾಮಗಳನ್ನು ವಿವರಿಸಿ.

10) Discuss Global warming.
ಜಾಗತಿಕ ತಾಪಮಾನವನ್ನು ಚರ್ಚಿಸಿ.

11) Explain the effects of water pollution.
ಜಲಮಾಲಿನ್ಯದ ಪರಿಣಾಮಗಳನ್ನು ವಿವರಿಸಿ.

12) Explain Wildlife Protection Act.
ವನ್ಯಜೀವಿ ಸಂರಕ್ಷಣಾ ಕಾಯಿದೆಯನ್ನು ವಿವರಿಸಿ.

13) Explain pond ecosystem.
ಕೊಳ ಪರಿಸರ ವ್ಯವಸ್ಥೆಯನ್ನು ವಿವರಿಸಿ.

DCCA – 202

II Semester B.C.A. Degree Examination, August/September 2023
(NEP Freshers and Repeaters)
COMPUTER APPLICATION
CAC 05 : Object Oriented Concepts Using Java

Time : 2½ Hours Max. Marks : 60

***Instruction** : Answer **all** the Sections.*

SECTION – A

I. Answer **any 6** questions. **Each** question carries **2** marks. **(6×2=12)**

1) What is JDK ?

2) Define class.

3) What is finalizer ?

4) What is an Inheritance in Java ?

5) What is an overriding ?

6) What is a panel ?

7) What is a Menu ?

8) What is swing ?

9) What is a stream ? Mention its types.

SECTION – B

II. Answer **any 4** questions. **Each** question carries **6** marks. **(4×6=24)**

10) Explain the features of Java.

11) What are constructors ? Explain parameterized constructor with an example.

12) Explain creating and extending interface with an example.

13) Explain mouse events with example.

P.T.O.

14) Explain the following with example :

i) Radio button. 3

ii) Combo box. 3

15) Write a note on binary I/O classes.

SECTION – C

III. Answer **any 3** questions. **Each** question carries **8** marks. **(3×8=24)**

16) Explain any four types of operators in Java.

17) Write a note on String class.

18) Write a note on packages in Java.

19) Explain the following :

a) Flow Layout. 4

b) Grid Layout. 4

20) Explain the Life cycle of thread with a neat diagram.

II Semester B.C.A. Examination, August/September 2023
(NEP – Freshers and Repeaters)
COMPUTER APPLICATION (Paper – II)
Discrete Mathematical Structures

Time : 2½ Hours

Max. Marks : 60

Instruction : *Answer **all** the Sections.*

SECTION – A

I. Answer **any six** questions. **(6×2=12)**

1) If A = { 1, 2, 3} , B = {3, 4, 5} and C = {0, 2, 3} find $(A \cap B) \times C$.

2) Define Tautology.

3) State principle of mathematical induction.

4) Define scalar matrix with an example.

5) If $A = \begin{bmatrix} 4 & 1 \\ 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 4 \\ 2 & 1 \end{bmatrix}$ find $(A+B)^T$.

6) Show that ${}^nP_r = n \times (n-1)\ P_{r-1}$.

7) Find the value of ${}^{10}C_5$.

8) Write the recurrence relation for Fibonacci numbers.

9) Define a complete graph with an example.

SECTION – B

II. Answer **any four** questions. **(4×6=24)**

10) i) Write the converse, inverse and contra positive of the conditional statement "If two angles are right angles then they are congruent".

ii) Prove that $p \vee (q \wedge r) \leftrightarrow (p \vee q) \wedge (p \vee r)$ is a Tautology.

P.T.O.

11) i) Show that the function $f : R \to R$ defined by $f(x) = 3 - 4x$ is one-one and onto.

ii) In how many ways the letters of the word "MISSISSIPPI" be arranged, so that all the S's are together ?

12) A committee of 7 has to be formed from 9 boys and 4 girls. In how many ways this can be done when the committee consists of

i) Exactly 3 girls

ii) At least 3 girls

iii) At most 3 girls

13) i) Find the coefficient of x^2y^4 in the expansion of $(x + y)^6$.

ii) Explain a regular graph with an example.

14) Solve the system of equations using Cramer's rule

$3x + y + z = 3$

$2x + 2y + 5z = -1$

$x - 3y - 4z = 2.$

15) In a survey of 260 college students the following data obtained. 64 had taken mathematics, 94 had taken computer science, 58 had taken electronics, 28 had taken both mathematics and computer science, 26 had taken both mathematics and electronics, 22 had taken both computer science and electronics, 14 had taken all the three. Determine

i) How many students had taken none of the three ?

ii) How many had taken only computer science ?

SECTION – C

III. Answer **any three** questions. **(3×8=24)**

16) i) Determine the relation R in the set

$A = \{1, 2, 3, ...,14\}$ defined as

$R = \{(x, y) | 3x - y = 0\}$ is an equivalence relation or not.

ii) Let $f : R \to R$ and $g : R \to R$ is defined by $f(x) = x + 2$ and $g(x) = x - 2$. Find $f \circ g$ and $g \circ f$.

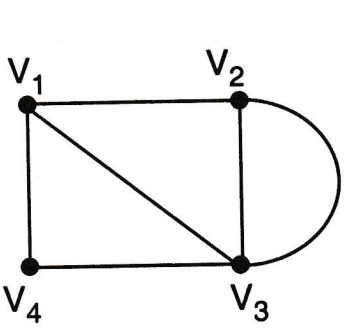
17) Prove by mathematical induction, for all positive integers $n \geq 1$

$$1^2 + 2^2 + 3^2 + \ldots\ldots + n^2 = \frac{n(n+1)(2n+1)}{6}.$$

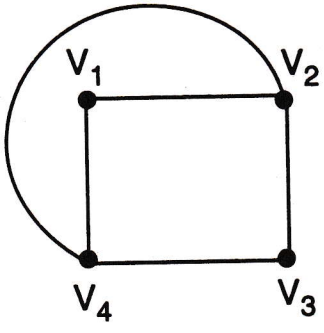
18) Solve the recurrence relation

$a_n - 4a_{n-1} + 4a_{n-2} = 0$, $n \geq 2$, $a_0 = 1$, $a_1 = 3$.

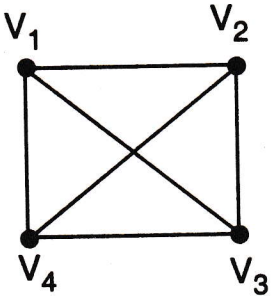
19) i) Explain which of the following is a complete graph and why ?



i)



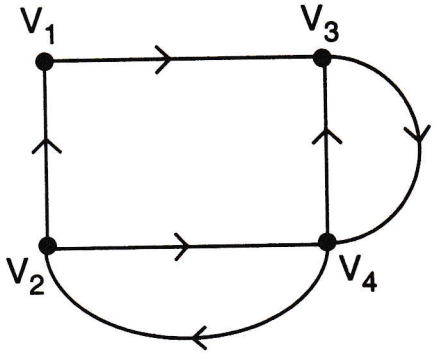
ii)



iii)

ii) Explain an Euler graph with an example.

20) i) Write the matrix of the following digraph.



ii) Draw the graph which is both Hamiltonian path and Hamiltonian circuit.