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XEV(H-2)BCA(3)

2008

TIME : 3 Hours

Full Marks : 75

Candidate are required to give their answers in their own words as far as practicable.

Attempt any **Five** questions.

All Questions have equal marks.

1. What do you understand by Network? Explain various network topologies.
2. What is communication channel? Explain different types of communication channel.

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Bca-II Paper: III

3. Differentiate between Internet and Intranet. Discuss the growth of Internet.
4. What are pop and Web based email? Write the advantages of pop based email and disadvantages of web based email.
5. How can you search a website by its contents? Explain with example. Write name of any four free email service providers with URL address.
6. What do you understand by Boolean algebra. Prove the following:
 - (a) $A(\bar{A}+B) = A.B$
 - (b) $AB + A\bar{B} = A.$
7. What do you understand by operator precedence? Give the list of precedence of various operators in C. Distinguish between a unary and Binary operator with examples.

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Bca-II Paper-III

8. Explain various data types used in C with appropriate examples.
9. What do you mean by simplex and duplex? Describe the half Duplex transmission how.
10. Write short notes on any two of the following.
 - (a) Logic gate
 - (b) Demorgan theorem
 - (c) Header files in C
 - (d) Pointer.

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XEV(H-2)BCA-(4)-N

2008

TIME : 3 Hours

Full Marks : 75

Candidate are required to give their answers in their own words as far as practicable.

Answer any Five questions.

Q.1 . is compulsory

All Questions have equal marks.

Q1. Answer the following questions

a) What is a data structure? Explain its three components.

b) Define abstract data type? Discuss the properties of

ADT (Abstract data type)?

2008

B.E. - II Paper - IV

- c) What are the different data types available in c language?
Explain with examples.
- d) Explain algorithm and its types? Distinguish between a structure and a class.
- e) Define trees. Discuss it's usage in different application.
And describe binary tree.

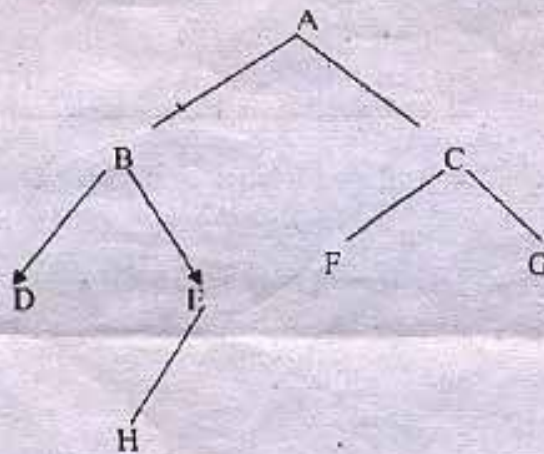
Q2. Explain stack mechanism? What do you mean by stack overflow and stack underflow? Distinguish between static and dynamic implementation of stack.

Q3. Explain the different types of queues? How is implementation of queue done? What are the limitations of simple queue? Explain the insertion and deletion operations of queue.

Q4. Discuss the linked list with it's operation? Explain the operation of insert and delete a node from the doubly linked list.

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BCA-II paper-IV

- Q5. Define a binary tree? Discuss its properties, what are the differences between trees and a graph?
- Q6. Explain the types of algorithms for tree traversal. List and describe the various operations on binary tree using linked representation.
- Q7. Give the inorder, pre-order, post-order and breadth first traversal for the following tree.



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Bca-II paper-IV

Q8. Explain the various types of searching techniques.

Write an algorithm with analysis steps for linear search and binary search.

Q9. Explain the characteristics of the performance of a sorting algorithm, Describe quick sort algorithm

Q10. Write a program in c-language to implement stack with 2-Dimensional array. Perform the push () and pop () operations.

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XEV(S-2)-E(2)

2008

TIME : 3 Hours

Full Marks : 100

Candidate are required to give their answers in their own words as far as practicable.

Figures in Right hand Margin indicate Marks.

1. Explain the following with reference to the context: $8 \times 3 = 24$
 - (a) Read not to contradict and confuse; nor to believe and take for granted ; nor to find talk and discourse ; but to weigh and consider.
or
“ There you are”, he would say . Stepping heavily off the chair

I

turn over

2008

Bea-II Paper- English

on to the charwoman's corns and

surveying the mess he had made with evident pride.

"Why some people would have had a man in to do a little thing like that."

- (b) She got out her curling irons and lighted the gas and went to work repairing the ravages made by generosity added to love . Which is always a tremendous task dear friends a mammoth task.

or

I have a bet on you .If I win it , you shall have any situation that is in my gift any, that is that you shall be able to prove yourself familiar with and competent to fill .No signature no address,no date.

- (c) I do not know when that Rebellion wil come,it might be in a week or in a hundred years , but I know , as surely as I see this straw beneath my feet,that sooner or later justice

2008
Bca-II Paper - English

will be done.

or

Gentleman , I will give you the same toast as before but in a different form .Fill your glasses to the brim.

Gentleman , here is my toast. To the prosperity of the manar farm.

2. Discuss the aim of George Orwell behind writing ANIMALFARM. 17

or

Who among the major characters of Animal Farm appeals to you most and why.

3. Give a critical appreciation either of 'The gift of the Magi' or of 'A work of Art.' 17
4. Sum up the ideas contained either in "Indian Civilization and Culture " or in 'Forgetting' 17

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Ben-II Paper - English

5. Write an Essay on any one of the following topics:- 15

- (a) Emancipation of women.
- (b) Criminalisation of Politics/ Politicalisation of crime.
- (c) Honesty is the Absence of chance .
- (d) Politics is the last refuge of the scoundral.
- (e) Avarice begets evils.
- (f) A journey to the Moon.
- (g) Handsome is the handsome does.

6. Correct the following sentences: 5 x 2 = 10

- (a) I have read this book ten years ago.
- (b) He came here ~~with a view~~ to help us.
- (c) She had reached the station after the train left.
- (d) God knows what has ~~be~~fallen me that I cannot walk properly.
- (e) What do you want to see in my eyes?

or

turn over

2008
Bca-II paper - English

Frame sentences with the following words :- [10]

- (a) 'ascent' and 'assent' .
- (b) 'berth' and 'birth.'
- (c) 'currant' and 'current.'
- (d) 'drawa' and 'drown'.
- (e) 'elemental' and 'elementary'

or

Use the following phrases in sentences of your own :

[10]

- (a) As par with,
- (b) bag and baggage,
- (c) Come down on,
- (d) dark horse,
- (e) eleventh hour.

————— * —————

2008

TIME : 3 Hours

Full Mark : 100

Candidate are required to give their answers in their own words as far as practicable.

"Answer any eight questions select at least two from each group. The questions are of equal value."

Group-A

1. (a) State and prove Taylor's theorem.
(b) If $y = x^2 \sin x$ find y_n .
2. (a) State and prove Euler's theorem on homogeneous functions of two variable.
(b) If $u = \tan^{-1} \frac{y}{x}$ prove that $\frac{\delta^4 u}{\delta x^2 \delta y^2} + \frac{\delta^2 u}{\delta y^2} = 0$.
3. (a) Evaluate $\lim_{x \rightarrow 0} \frac{(1+x)^{1/x} - e}{x}$.
(b) Find the radius of curvature for the cartesian curve $y = f(x)$.

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Bca-II Paper: Math

(2)

4. (a) Obtain a reduction formula for $\int \cos^n x dx$.
(b) Evaluate $\int_0^{\pi} \sin x dx$ as the limit of a sum.
5. (a) Find the area of the loop of the curve $y^2 = x(x-1)^2$.
(b) Find the perimeter of the loop of the curve $9ay^2 = (x-2a)(x-5a)^2$.
6. Define Beta and Gamma function, and Prove that $B(m, n) = \frac{\Gamma(m) \Gamma(n)}{\Gamma(m+n)}$.
7. Solve any two of the following :
(a) $y dx = x dy = xy dx$
(b) $\frac{dy}{dx} = \frac{y}{x} + \tan \frac{y}{x}$
(c) $(x-y)^2 \frac{dy}{dx} = a^2$
8. Solve any two of the following :
(a) $x \frac{dy}{dx} + \frac{y^2}{x} = y$
(b) $x dy - y dx - \sqrt{x^2 + y^2} dx = 0$
(c) $\frac{dy}{dx} + 1 = e^{x-y}$

(Continued)

2008

Bca-II Paper

CT

(3)

9. (a) Solve $y = px + p - p^2$ and obtain the singular solution.
- (b) Prove that the orthogonal trajectories of the rectangular hyperbola $xy = a^2$ is $x^2 - y^2 = c^2$.

Group - B

10. (a) Establish the formula :
- $$\vec{a} \times (\vec{b} \times \vec{c}) = (\vec{a} \cdot \vec{c})\vec{b} - (\vec{a} \cdot \vec{b})\vec{c}$$
- (b) Prove that
- $$\vec{a} \times (\vec{b} \times \vec{c}) + \vec{b} \times (\vec{c} \times \vec{a}) + \vec{c} \times (\vec{a} \times \vec{b}) = 0$$
11. (a) If $\vec{u}(t)$ and $\vec{v}(t)$ be two differentiable function of the scalar t then show that :

$$\frac{d}{dt} (\vec{u} \cdot \vec{v}) = \vec{u} \cdot \frac{d\vec{v}}{dt} + \frac{d\vec{u}}{dt} \cdot \vec{v}$$

- (b) Prove that the necessary and sufficient condition for the vector function $\vec{u}(t)$ to have constant magnitude is $\vec{u} \cdot \frac{d\vec{u}}{dt} = 0$.

12. (a) Prove that $\text{curl} (\vec{u} + \vec{v}) = \text{curl} \vec{u} + \text{curl} \vec{v}$

- (b) Prove that $\text{div} (\text{curl} \vec{v}) = 0$.

(Turn Over)

2008
B.A.-II (4) Paper - Math

13. (a) Find the necessary and sufficient condition for a system of coplaner forces to be in equilibrium.
- (b) Forces P, Q, R act along the line $x=0, y=0$ and $x \cos a + y \sin a = p$. Find the magnitude of the resultant and equation of the line of action.
14. (a) State and prove the principle of virtual work for a coplaner force system.
- (b) Find the work done by the tension of string in a small displacement.
15. write short note on any *two* of the following:-
- (a) Principle of angular momentum.
- (b) Potential energy.
- (c) Inertial frames of reference.
16. (a) A body moves from a point O , so that its acceleration is $\frac{1}{(t+1)^2}$, where t is the time taken in second from O . Find the distance moved in 9 second and the velocity then.
- (b) Given that the accelerations of a point is $(a - bv^2)$ and that when $t=0, s=0$ and $v=0$. Prove that the distance of the point at time t is $\frac{1}{b} \log \cosh(\sqrt{abt})$.

(Continued)

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XEV (S-2).Hn.-(Comp.)100 Mark

2008

BCA-II Paper-Hindi

TIME : 3 Hours

Three

Full Marks : 100

Candidate are required to give their answers in their own words as far as practicable.

सभी प्रश्नों के उत्तर दें।

1. 'यशोधरा' के आधार पर महाभि निप्रक्रमण की प्रेरक भावनाएँ क्या थी ? लिखिए। 20

अथवा

सिद्धार्थ का चरित्र-चित्रण कीजिए।

अथवा

युधिष्ठिर का चरित्र-चित्रण कीजिए।

(Turn Over)

2008

Ben-II Paper - Hindi

2. 'कथा सारिता' में संकलित 'घरजमाई' या 'विषके दाँत' कहानी की समीक्षा कीजिए।

अथवा

'कथा कुंज' में संकलित 'मुफ्त का यश' या 'एक और जिन्दगी' कहानी का सारांश लिखिए। 20

3. 'नौ पर्दे' में संकलित 'रात बीतने तक' या 'शाहजहाँ के आँसू' शीर्षक एकांकी की एकांकी कला के आधार पर समीक्षा कीजिए।

अथवा

'सूखी डाली' या 'दो कलाकार' एकांकी का कथ्य स्पष्ट कीजिए। 20

4. निम्नलिखित की सप्रसंग व्याख्या कीजिए: 10x2=20

क) जय हो अध से गहन गर्त्र

में गिरे हुए मानव की,

मनु के सरल अबोध पुत्र

की, पुरुष ज्योति संभवकी।

अथवा

युद्ध को तुम निन्दय कहते हो मगर

जब तलक हैं उठ रही धिनगारियाँ

2008
B.A.-II Paper-Hindi

भिन्न स्वार्थों की कुलिष संघर्ष की
युद्ध तब तक विश्व में अनिवार्य है।

अथवा

सिद्धि मार्ग की बाधा नारी,
फिर उसकी क्या गति है
पर उनसे क्या पूछूँ
जिनको मुझसे आज विरति है ?

अथवा

धिक सब राज-पाठ, धन-धाम,

धन्य उसी का लक्ष्य ललाम,

किन्तु कहूँ कैसे हे राम!

चला गया रे, चला गया।

ख) औरत और बिल्ली की जात एक। पहले ही दिनके
ध्रुवद्वार का असर उस पर रहता है।

अथवा

क्या लड़कियों के दिल नहीं होता ? क्या उन्हें
घोट नहीं लगती ? क्या वे बेबस भेड-बकरियाँ हैं।
जिन्हे कसाई देखभाल कर खरीदते हैं ?

2008

BCA-II paper - Hindi

अथवा

महल और झापड़ीवालों की लड़ाई में अक्सर महल वाले जीतते हैं। पर उसी हालत में, जब दूसरे झापड़ी वाले उनकी मदद अपने ही खिलाफ करते हैं।

5. निम्नलिखित में-से किसी एक पर निबन्ध लिखिए: 20

- क) भूमण्डलीकरण की युनितियों
- ख) आपका प्रिय खिलाड़ी
- ग) यदि मैं प्रधानमंत्री होता
- घ) उच्च शिक्षा की चुनौतियाँ
- ङ) बरसात की एक रात