

Unit IV

8. (a) There are four orders in nature. How does each order participate in the harmony in the nature ? Give few examples.
- (b) Existence is co-existence of mutually interacting units in all-pervasive space. Explain. $7\frac{1}{2} \times 2 = 15$
9. What are the bases of Humanistic education ? Explain Humanistic Constitution and Humanistic Universal Order in detail. 15

A-211

B.C.A. EXAMINATION, Dec. 2016

(First Semester)

(B. Scheme) (Main & Re-appear)

**HUMAN VALUES AND PROFESSIONAL
ETHICS**

BCA-101-B

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Q. No. 1 is compulsory. Attempt other *four* questions, taking at least *one* question from each Section. All questions carry equal marks.

1. Write short notes on the following : $3 \times 5 = 15$

- (a) Define Ethics.
- (b) Is trust and respect as the fundamental values of relationship ? Explain.
- (c) Explain harmony.
- (d) Differentiate between intention and competence.
- (e) Explain definitiveness of Ethical human conduct.

Unit I

2. What is self-exploration ? Explain its contents and process. Also explain natural acceptance and experiential validation as the mechanism for self-exploration. 15
3. What is meant by continuity of happiness ? How is it related to harmony at every level of our living ? Also explain the right understanding between relationships and physical facilities in your perception. 15

Unit II

4. How does the feeling of Sanyam ensure health of the Body ? List two programs of Sanyam. Also explain the correct appraisal of physical needs. 15
5. Explain "Human being as a co-existence of the sentiment 'I' and material 'Body'". 15

Unit III

6. (a) What is the meaning of respect ? How do we disrespect others due to lack of right understanding ?
(b) What is your perception of 'Samman' ? Differentiate between respect and differentiation. $7\frac{1}{4} \times 2 = 15$
7. (a) "Society is an extension of family" Explore.
(b) Explain a universal harmonious order in society. $7\frac{1}{2} \times 2 = 15$

No. of Printed Pages : 05

Roll No.

A-212

B.C.A. EXAMINATION, Dec. 2016

(First Semester)

(B. Scheme) (Main & Re-appear)

MATHEMATICS-I

BCA-103-B

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. Attempt remaining four questions out of Units I, II, III and IV by selecting *one* question from each Unit. All questions carry equal marks.

1. (a) Find the value of $\sin 15^\circ$.
- (b) Solve $\cos x = 1/2$.
- (c) Give the statement of the binomial theorem for the positive integral index.
- (d) Write the equation of the line through the point $(-2, 5)$ with slope -4 .
- (e) Find the distance between the parallel line $3x - 4y + 7 = 0$ and $3x - 4y + 5 = 0$.
- (f) Find the sum of first 5 terms of the G.P. $1 + 2/3 + 4/5 + \dots$

Unit I

2. (a) Prove that :

$$\frac{\sin x - 2 \sin 3x - \sin x}{\cos 5x - \cos x} = \tan x$$

$$\frac{\sin 5x - 2 \sin 3x + \sin x}{\cos 5x - \cos x}$$

- (b) Prove that :

$$\cos^2 x + \cos^2 \left(x + \frac{\pi}{3} \right) + \cos^2 \left(x - \frac{\pi}{3} \right) = \frac{3}{2}$$

3. (a) If $\cot x = \frac{-5}{12}$, x lies in second quadrant, find the values of other five trigonometric functions.
- (b) Solve :

$$2 \cos^2 x + 3 \sin x = 0$$

Unit II

4. (a) Using binomial theorem, prove that :

$$6^n - 5n$$

always leaves remainder 1 when divided by 25.

- (b) "Find a if the 17th 18th terms of the expansion $(2 + a)^{50}$ are equal.

5. (a) If α, β are the roots of the equation $ax^2 + bx + c = 0$, find the value of $\alpha^4 \beta^7 + \alpha^7 \beta^4$.

- (b) If α, β are the roots of the equation $ax^2 + bx + c = 0$, form the equation whose roots are $(\alpha - \beta)^2$ and $(\alpha + \beta)^2$.

Unit III

6. (a) If the angle between two lines is $\pi/4$ and slope of one of the line is $1/2$, find the slope of the other line.

(b) Find the angle between the lines :

$$y - \sqrt{3}x - 5 = 0 \quad \text{and} \quad \sqrt{3}y - x + 6 = 0$$

$\sqrt{3}x$ $\sqrt{3}y$

7. (a) If the lines :

$$2x + y - 3 = 0, \quad 5x + ky - 3 = 0 \quad \text{and} \\ 3x - y - 2 = 0$$

are concurrent, find the value of k .

(b) Find the equation of the line perpendicular to the line $x - 2y + 3 = 0$ and passing through the point $(1, -2)$.

Unit IV

8. (a) The sum of n terms of two arithmetic progressions are in the ratio $5n + 4 : 9n + 6$. Find the ratio of their 18th terms.

(b) Find the sum of $7 + 77 + 777 + 7777 + \dots$ to n terms.

9. (a) If

$$\frac{a^n + b^n}{a^{n-1} + b^{n-1}}$$

is the arithmetic mean a and b , then find the value of n .

(b) If p^{th} , q^{th} , r^{th} and s^{th} terms of an arithmetic progression are in geometric progression, then show that $(p - q)$, $(q - r)$, $(r - s)$ are also in geometric progression.

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Roll No.

A-214

B.C.A EXAMINATION, Dec. 2016

(First Semester)

(B. Scheme) (Main & Re-appear)

COMMUNICATION SKILLS-I

HUM-501(B)

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. **Q. No.** 1 is compulsory. All questions carry ^{equal} marks.

Please turn over

(2-63/1) M-A-214

P.T.O.

BCA

1. Answer the following questions in short :

(a) Fill in the blanks with correct form of the verb (Do any four) : 4

(i) Sohan.....at computer since morning. (work)

(ii) They were.....cricket when I visited them.

(iii) Geeta was dancing while Sunita..... (cook)

(iv) I used to.....for morning walk daily. (go)

(v) It is.....heavily. (rain)

(vi) He is.....to the city next week.

(b) Write antonyms of the following words (do any four) : 4

Awareness, Abnormal, Certain, Damage, Flexible, Midnight.

(c) What is advertisement ? Explain. 4

(d) Define E-mail. 3

Unit I

2. Form adjectives with the help of given words (Do any ten) : 1.5×10=15

Affection, beast, breath, year, damage, law, class, stable, accident, nature, satisfy, technology.

3. Do as directed : 5×3=15

(a) It was not advisable for you to tell a lie but you did. (Use shouldn't)

(b) It is our duty/obligation to love our country. (Use must)

(c) He lived in London but he doesn't live here now. (Use used to)

(d) She had the capacity to help the poor and she did. (Use be able to)

(e) It is likely that they were twenty when they got married. (Use would be)

Unit II

4. Write one word for the following sentences. (Do any ten) : 1.5×10=15

(a) One who can be easily hurt.

- (b) One who offers one's services without asking/payment.
 - (c) A person who honours all religions.
 - (d) Killing one self.
 - (e) Sole right to sell some invention/idea.
 - (f) A cure for all diseases.
 - (g) One who looks at the bright side of things.
 - (h) The stage of growth between boyhood and youth.
 - (i) That which catches fire easily.
 - (j) Person working in one and the same institution.
 - (k) One is present everywhere.
 - (l) The study of planets.
5. Make sentences from the given words (Do any ten) : 1.5×10=15
Potential, ignited, unclassified, planet, approve, conflict, detachment, diabolic, theory, civilized, triumph, evolve.

Unit III

6. Read the passage given below and answer any five questions that follow based on the information given in the passage. 5×3=15

The human body can tolerate only a small range of temperature, especially when the person is engaged in vigorous activity. Heat reactions usually occur when large amounts of water and/or salt are lost through excessive sweating following strenuous exercise. When the body becomes overheated and cannot eliminate the excess heat, heat exhaustion and heat stroke are possible.

Heat exhaustion is generally characterized by clammy skin, fatigue, nausea, dizziness, profuse perspiration, and sometimes fainting, resulting from an inadequate intake of water and the loss of fluids. First aid treatment for this condition includes having the victim lie down, raising the feet 8 to 12 inches, apply cool, wet cloths to the skin, and giving the victim sips of salt water (1 teaspoon per glass, half a glass every 15 minutes) over a 1-hour period.

Heat stroke is much more serious; it is an immediate life-threatening situation. The characteristics of heat stroke are a high body temperature (which may reach 106°F or more); a rapid pulse; hot, dry skin; and a blocked sweating mechanism. Victims of this condition may be unconscious, and first-aid measures should be directed at quickly cooling the body. The victim should be placed in a tub of cold water or repeatedly sponged with cool water until his or her temperature is sufficiently lowered. Fans or air conditioners will also help with the cooling process. Care should be taken, however, not to over-chill the victim once the temperature is below 102°F.

- (a) What are the reasons of heat stroke ?
- (b) What is the difference between heat stroke and heat exhaustion ?
- (c) Why is heat stroke more dangerous than heat exhaustion and what is the most immediate aid need to be taken for a person tending to a victim of heat stroke ?

- (d) What are the symptoms of heat stroke ?
- (e) What are the characteristics of heat exhaustion ?
- (f) How can heat exhaustion be cured ?

7. Prepare an advertisement inviting students of your institution for a blood donation camp. **15**

Unit IV

8. Write an e-mail to your friend with the help of your desktop/laptop describing 'Annual Technical Festival' recently held in your institute. **15**
9. Write your resume for the job you are looking for. **15**

Section D

8. (a) Explain different types of computer network. 10
(b) Differentiate between Analog and Digital transmission. 5
9. (a) Write about advantages and disadvantages of e-Mails. 9
(b) Explain the following network topologies : 6
(i) Star
(ii) Ring.

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Roll No.

A-215

B.C.A. EXAMINATION, Dec. 2016

(First Semester)

(B. Scheme) (Main & Re-appear)

INFORMATION TECHNOLOGY

FUNDAMENTALS

BCA-107-B

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Q. No. 1 is compulsory. Attempt other four questions, taking at least one question from each Section. All questions carry equal marks.

1. (a) What is a Software ? Give examples.
- (b) What is a RAM and why is it called so ?
- (c) Write the differences between algorithm and flowcharts ?
- (d) What is a Databases ?
- (e) What do you understand by Local Area Network ? 15

Section A

2. (a) Draw a block diagram of computer and explain the functioning of each component in detail. 10
- (b) Differentiate between minicomputer and microcomputer. 5
3. Perform the following operations : 15
 - (a) $(647.23)_8$ to $()_2$
 - (b) $(1239.52)_{10}$ to $()_8$
 - (c) $(6AB39)_{16}$ to $()_8$
 - (d) $1101010111 + 1001101010$
 - (e) $11100111 \rightarrow 10110110$

Section B

4. Explain in detail about the various storage devices. 15
5. (a) Differentiate between High level language and low level language. 5
- (b) Write the various notations for Flowchart. Write an algorithm and draw a flowchart for finding the average of five numbers. 10

Section C

6. (a) What is an operating system ? Explain the various services provided by the operating system. 10
- (b) Write the syntax for commands to display system time and date in DOS and UNIX operating system. 5
7. (a) How is a database management system different from the file processing system ? 10
- (b) What is data independence ? How is it achieved ? 5