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QUESTION PAPERS
IV SEMESTER AND ATKT EXAMINIATION
S.Y. B.SC. COMPUTER SCIENCE
MARCH : 2016

REGULAR		ATKT	
SUBJECT	MARKS	SUBJECT	MARKS
FOUNDATION COURSE	75	NIL	NIL
MATHEMATICS - I	75	NIL	NIL
MATHEMATICS - II	75	NIL	NIL
MATHEMATICS - III	75	NIL	NIL
COMPUTER GRAPHICS	75	NIL	NIL
JAVA PROGRAMMING	75	NIL	NIL
SOFTWARE ENGINEERING	75	NIL	NIL

S.Y.C.S

Date: 16-03-2016

ICLES' MOTILAL JHUNJHUNWALA COLLEGE, VASHI

Semester – IV. March 2016

Class: S.Y B.A / B.Com./B.Sc. Time: Time 2 hrs.30 min

Subject: Foundation Course Marks: 75

NB 1) All questions are compulsory

Q.1.A) Discuss the important provision of Consumer Protection Act 1986. 09

OR

B) Explain the relation of RTI with Transparency and Accountability.

C) Write a note about consumer court under Consumer Protection Act. 06

OR

D) Describe the main aspects of the Prevention of Food Adulteration Act 1955.

Q.2.A) Discuss the concept ecofeminism. 09

OR

B) Discuss in detail the Polluter Pays Principle.

C) Explain the need and impact of ecospirituality. 06

OR

D) Explain the concept of carbon space.

Q.3.A) Describe the application of laser technology. 09

OR

B) Explain the application of nanotechnology.

C) Write a note on issue of control of technology. 06

OR

D) Discuss the interconnection between growth of technology and development of societies.

Q.4.A) Define motivations. Explain Maslow's herirarchy need theory and two factors theory in brief. 09

OR

B) Describe the present condition and status in tribal areas and urban areas.

C) Write about waste management. 06

OR

D) What are the problems in education sector in rural areas?

Q.5. Write short note on Any THREE of the following 15

a) Quantity ability.

b) Rural concept.

c) SMART Goals

d) Types of motivation

e) Issues of urbanization

—X—X—X—

ICLES' MOTILAL JHUNJHUNWALA COLLEGE OFARTS COMMERCE AND SCIENCE, VASHI, NAVI MUMBAI

SEM-IV March 2015-2016

Class: S.Y.B.Sc. Date: 17/03/16

Subject: Mathematics Max Marks: 75

Paper: I Duration: 2:30Hrs

Note: i) All questions are compulsory

ii) Figure to the right indicate full marks

Q.1 [A] Attempt any one (08)

a) Let x = (x_1+ x_2+ x_3+--------+ x_n) and y = (y_1+ y_2+y_3 +----------+ y_n) be any two vectors in R^n then show that i) || x || = 0 if and only if x = (0,0,0,--------,0).

ii) ||x + y || ≤ || x || + || y ||.

b) Let f: S ⊆R^n→R be a scalar field. Let a ∈ S. Let u ∈ R^n and a + ut∈ S for all 0 ≤ t ≤ 1. Suppose D_uf(a) exists for all a+ ut where 0 ≤ t ≤ 1 then show that ∃θ such that 0 <θ< 1 and f(a + u) – f(u) = D_uf(z) where z = a + u θ.

[B] Attempt any two (12)

a)In the real linear space C (1, e), define an inner product by the equation

(f, g) = $\int_1^e (\log x)\, f(x)g(x)dx$. If f(x) = $\sqrt{x}$, compute ||f||.

b) Determine the set of points (x, y) at which f(x, y) is continuous

Where f(x, y) = $\frac{xy}{x^2+y^2}$ if (x, y)≠ (0, 0) , f (0, 0) = (0, 0).

c) Find Directional derivative of f(x, y) = x + 2y -3 at a = (1, -1) in the direction of $\vec{u}$=3$\vec{i}$ - $\vec{j}$.

d) Find the real value θ ∈ (0, 1) if it exists satisfying f (a + u) – f (a) = D_u f (a + θu) for f (x, y) = x^2 + y , a = (1, 0) , u =(-1, 1).

Q.2 [A]Attempt any one (08)

a) State and prove Euler's theorem for function of 3 variables.

b) Let U ⊆R^2be an open set and f: U→R be a scalar field. Suppose $\frac{\partial f}{\partial x}$ exists and are continuous at a = (a_1,a_2) ∈ U, then show that f is differentiable at (a_1,a_2).

[B] Attempt any two (12)

a) Evaluate the total derivatives of function f: R^2→R is given by f(x, y) = 3x.

b) Find the derivative of z with respect to t if z = 3x^3y + 4 $y^3$and x = sin 5t, y = cos 5t. Also find $\frac{dz}{dt}$ when t = $\frac{\Pi}{2}$.

c) Find the equation of the tangent plane and normal line to the surface z = 9x^2+y^2+ 6x – 3y +5 at (1, 2, 3).

d) Find f_x , f_y, f_{xx} , f_{xy} , f_{yx} , f_{yy} for the following

f(x, y) = e^x cos y + sin xy .

Q.3 [A] Attempt any one (08)

a) Let S be a non-empty subset of R^2. Let (a_1, a_2) and (a_1+h, a_2+k) be any two points in S such that the line segment joining these two points lies entirely in S. Suppose f: S→R possesses continuous partial derivatives of order n + 1, then show that P.T.O.