

Total No. of Questions : 08] [Total No. of Printed Pages : 4

Paper Code : 21306

F-406

B.C.A. (Second Semester)

Examination, 2022

(New Course)

Paper No. BCA-N-201

DIGITAL ELECTRONICS

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Fill in the blanks : **4**

(i) $(1010.011)_2 = (\dots\dots\dots)_{10}$

(ii) $(0.513)_{10} = (\dots\dots\dots)_8$

(1)

P.T.O.

21306 F-406

(iii) (B65F)

(iv) $(153)_{10}$

(b) What are u
called univ

(c) Explain wi
the working

(d) Draw 2-inp
MUX.

2. (a) What is a fl
flip flops? E

(b) Define com
design and

3. (a) Explain the
(b) Explain the
(c) Explain the v
in computer

4. (a) Design a 4-bit up-down counter. 7
(b) What is Register? Explain serial Register in detail. 7
5. (a) Differentiate b/w Combinational Digital circuits and sequential digital circuit. 7
(b) Distinguish b/w the following : 7
(i) RAM and ROM
(ii) Static and Dynamic memory
6. Write short notes on the following : 14
(a) CPU
(b) Demultiplex
(c) Adder
(d) Serial communication
7. (a) Show the logic diagram of clocked RS flip-flop with four NAND Gates. 7

<https://www.whatsapp.com/channel/0029vaf86733jz3t3w3>

Whatsapp Channel
Send your comments
अपने पुराने पेन्सिल को बचाना
Paytm से ऑनलाइन खरीदें

Total No. of Questions : 8] [Total No. of Printed Pages : 3

Paper Code : 21324
F-424

B.C.A. (Fifth Sem.) Examination, 2022-23
(New Course)
Paper-BCA-504
SOFTWARE ENGINEERING

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any **five** questions. **All** questions carry equal marks. Symbols used have their usual meanings.

1. (a) Describe the problem known as "Software-Crisis".
(b) "A software does not wear out". Justify this statement clearly.
2. (a) What is "SDLC"? Explain the spiral model of software development.
(b) How to develop "SRS-document"?

3. (a) Illustrate q
in detail.
(b) What are
methods o
4. (a) Write in br
(i) CAS
(ii) PERI
(b) Write dow
system inv
5. (a) What do y
DFD for "
(b) Describe t
to carry ou
6. (a) What is re
for any sof
(b) How enc
Explain.

P.T.O.

21324-F-424

7. (a) Draw the life-cycle of an information system and describe in detail.
- (b) How verification is different from validation.
8. (a) Write down the role of software engineer. Describe various paradigms of software engineering.
- (b) Write short notes on any two of the following :
- (i) COCOMO - model
 - (ii) Types of testing
 - (iii) Software Maintenance

Paper Code : 21310

F-410

B. C. A. (Second Semester)

EXAMINATION, 2019

(New Course)

Paper No. BCA-N-205

MANAGERIAL ECONOMICS

Time : Three Hours]

[Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. What is managerial economics ? State scope of managerial economics.
2. Define micro-economics. How is it different from micro-economics ? Give relevance of micro-economics.
3. What do you understand by the term 'demand forecasting' ? Give its uses with the help of examples.
4. Explain the concepts of average fixed cost, average variable cost, average cost and marginal cost.
5. What should be the reasonable rate of profit ? Why do firms put a limit on their profit ?

6. What are the objects of managerial economics ? State the major factors involved in managerial economics.

7. What are the characteristics of managerial economics ? How is it superior to it ?

8. What do you understand by 'perfect competition' ? Distinguish between perfect competition and monopoly.

Total No. of Questions : 9] [Total No. of Printed Pages : 4

Paper Code : 21304

F-404

B.C.A. (First Semester)

Examination, 2021-22

(New Course)

Paper-No. BCA-104-N

MATHEMATICS-I

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Symbols used have their usual meanings.

1. (a) Show that the limit of a product is equal to the product of limits.
(b) Evaluate the following limits, if they exist :
(i) $\lim_{x \rightarrow 0} \sin \frac{1}{x}$

(1)

P.T.O.

21304-F-404

(ii) $\lim_{x \rightarrow 0} \frac{1}{x}$

2. A function $f(x)$ is

$$f(x) = \begin{cases} (x^2/a) - a & \text{if } x \neq a \\ 0 & \text{if } x = a \end{cases}$$

Prove that the function is continuous at $x=a$.

3. (a) Explain the concept of continuity.
(b) Show that the function

$$f(x) = \begin{cases} 1 & \text{if } x \text{ is rational} \\ 5 & \text{if } x \text{ is irrational} \end{cases}$$

is not continuous at any point.

4. (a) Find the limit of the function

(b) (i) If $y = x^{1/n}$

$$(x^2 - y^2)$$

$$y_n = 0$$

(ii) If $u = \log(x^3 + y^3 + z^3 - 3xyz)$, show that

$$\left(\frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z} \right)^2 u = \frac{-9}{(x + y + z)^2}.$$

5. (a) Solve : $\frac{dy}{dx} = \frac{2x + 2y - 2}{3x + y - 5}.$

(b) Solve : $(D^2 + 1)y = \sin x \sin 2x.$

6. (a) Evaluate : $\int_0^{\pi/4} \sqrt{\tan \theta} d\theta.$

(b) Write reduction formula for $\int x \sin^n x dx.$

7. (a) If $u = x + y + z$, $v = x^2 + y^2 + z^2$ and $w = yz + zx + xy$,
prove that:

$$(\text{grad } u) \cdot [(\text{grad } v) \times (\text{grad } w)] = 0.$$

(b) Prove that $\nabla \cdot \{ \nabla(v \cdot a) - \nabla \times (v \times a) \} = \text{div } v;$

where 'a' is a constant unit vector.

8. (a) Solve : $\frac{d^2 y}{dx^2} = \sec ax$

(b) Solve : $(D^2 - 2D + 1)y = x^2 e^{3x}.$

9. (a) Find the eccentricity of the ellipse in co-ordinate system.
(b) A triangle ABC has vertices A=(8, 1), B=(1, 8) and C=(1, 1). Determine the radius of a circle passing through A, B and C.

Total No. of Questions : 8] [Total No. of Printed Pages : 4

Paper Code : 21301

F-401

B.C.A. (First Semester) Examination, 2021-22

(New Course)

Paper - BCA-101

Computer Fundamental and Programming

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All question carry equal marks.

1. (a) Draw a block diagram of Computer and explain the function of each of the blocks? 8
- (b) Explain the generation of Computer with their features? 6

(1)

P.T.O.

2. (a) What are the characteristics of primary and secondary storage with examples?
- (b) Differentiate between primary and secondary storage.
3. (a) Convert the following into decimal:
(i) (17.3)₁₆
(ii) (375)₁₆
(iii) (AB2)₁₆
- (b) What do you mean by point representation of ASCII & EBCDIC?
4. (a) Differentiate between Assembly Language and High Level Language.
- (b) Define S.O.P.

5. (a) Define Algorithm & Draw a flow chart to find greater between Two numbers? 7
 (b) What is structured programming? Discuss about the debugging and testing of programmes? 7
6. (a) Discuss various "C" operators with example. 7
 (b) Differentiate "while" and "Do-while" loop with example. 7
7. (a) What do you mean by Sorting? Describe Bubble sort? <https://www.mjpruonline.com> 7
 (b) What are two - dimensional arrays? Write a program in "C" language to add two matrices of 3×3 . 7
8. Write short notes on any **four** of the following:
 - (a) Central Processing Unit 3.5 each
 - (b) "C" Preprocessor
 - (c) Linear Array

- (d) Program
- (e) "For" loop
- (f) Data type
- (g) Insertion

Total No. of Questions : 8] [Total No. of Printed Pages : 3

Paper Code : 21326

F-426

B.C.A. (Sixth Semester) Examination, 2022

(New Course)

Paper No. -BCA-N-601

MULTIMEDIA CONCEPTS AND APPLICATION

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Symbols used have their usual meanings.

1. (a) Explain the basic techniques of multimedia development and delivery.
- (b) Explain the actual components of multimedia.

(1)

P.T.O.

2. (a) Differentiate between Linear and Non-Linear multimedia.
- (b) Explain the types of multimedia.
3. (a) What is the importance of multimedia in some useful applications?
- (b) Explain the various multimedia requirements.
4. (a) Differentiate between Text and Hypertext.
- (b) Explain the various types of Hypermedia.
5. (a) Explain the various multimedia development and delivery applications.
- (b) Explain the various multimedia applications in the area of education.

6. (a) Describe how multimedia can be used in:
- (i) Simulations
 - (ii) Knowledge transfer
- (b) What is digital video? Explain the use of digital video in developing multimedia applications. <https://www.mjpruonline.com>
7. (a) What types of application development is best suited for Everest Authoring System? Explain with example.
- (b) Explain how multimedia is used as a technological challenges for developers.
8. Explain any **two** of the following :
- (a) Distribution of Multimedia
 - (b) DLL and Icon based Programs
 - (c) Quick Time
 - (d) Multimedia Developer Team

Paper Code : 21316
F-416

B. C. A. (Fourth Semester)
EXAMINATION, 2019
(New Course)

Paper No. BCA-N-401
OPERATING SYSTEM

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Explain operating system architecture.
(b) Discuss the similarities and differences between paging and segmentation.
(c) Compare and contrast multitasking and multiprogramming.
2. (a) Describe the differences among short-term, medium-term and long-term scheduler.
(b) Explain the term process. What are the various states that a process can undergo ? Also explain PCB with a neat diagram.

(B-11) P. T. O.

3. (a) With a neat graph.
(b) What is the conditions for

4. (a) Let a disk c
4000, Current
previous req
pending req
1774, 948,
distance the
pending req
scheduling al

- (i) FCFS
(ii) SCAN
(iii) LOOK

- (b) What are s
counting sen

5. (a) Explain wit
Transition l
the perform

- (b) Consider the
3, 0, 4, 2, 3
with three
access for
algorithms?

[3]

6. (a) For the following snapshot, find the safe sequence using Banker's algorithm :

	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P ₀	0	0	2	0	0	4	1	0	2
P ₁	1	0	0	2	0	1			
P ₂	1	3	5	1	3	7			
P ₃	6	3	2	8	4	2			
P ₄	1	4	3	1	5	7			

- (i) Is the system in safe state ?
(ii) If a request from process P₂ arrives for (002), can the request be granted immediately ?

- (b) Given the memory partitions of 100 k, 500 k, 200 k, 300 k and 600 k apply first fit and last fit algorithm to place 212 k, 417 k, 112 k, 426 k.

7. (a) What is a file ? Explain the different file allocation methods.
(b) What are directories ? List the different directory structures with examples. Mention their advantages and disadvantages.

Total No. of Questions : 8 | [Total No. of Printed Pages : 3

Paper Code : 21325
F-425

B.C.A. (Fifth Sem.) Examination, 2022-23
(New Course)

Paper-BCA-505-N

ADVANCED COMPUTER ARCHITECTURE

Time : Three Hours / [Maximum Marks : 70

Note : Attempt any **five** questions. **All** questions carry equal marks. Symbols used have their usual meanings.

1. (a) Explain parallelism in Uniprocessor systems.
- (b) Describe data driven computing with example.

(1)

P.T.O.

2. (a) What are v
Explain with
(b) Explain res
Instruction p
3. (a) What is SIM
interconnecti
(b) What is job s
4. (a) What is mu
loosely coup
Tightly coup
(b) What is
Describe with
5. (a) What is diffe
Time shared
(b) State and
algorithm for

21325-F-425

6. (a) What are multiprocessor scheduling strategies? Explain.
- (b) What do you understand SPARC architecture beneficial for parallelism.
7. (a) What is Window register concept? State your comments.
- (b) Describe Architecture of TI-ASC system.
8. Explain any **two** of the following :
- (a) Multiport Memories.
- (b) Addressing schemes for main memory.
- (c) RISC Scalar Processors
- (d) Matrix Multiplication on Concurrent Processor

Total No. of Questions : 8 | [Total No. of Printed Pages : 3

Paper Code : 21323
F-423

B.C.A. (Fifth Sem.) Examination, 2022-23
(New Course)
Paper-BCA-503-N

INTRODUCTION TO INTERNET PROGRAMING

Time : Three Hours | [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Symbols used have their usual meanings.

1. (a) What are the characteristics of Java programming language? Explain with example.
(b) What are the desired components of primary applications? Describe.
2. (a) What are the data types used in Internet applications of Java language? Explain.

- (b) Write all the data types and their range of a number.
3. (a) How primitive data types are stored in memory?
(b) Describe the different ways of storing strings.
4. (a) What is method overloading? Give types with examples.
(b) Describe the different types of exceptions with example.
5. (a) What are the different types of arrays? Explain.
(b) Write a program to generate fibonacci series.
6. (a) What do you mean by garbage collection and life time of an object? Give proper examples.
(b) Write step by step process of creating a complex class.

P.T.O.

21323-F-423

7. (a) What is constructor? Describe its various types.
- (b) What is HTTP? Create & Explain an HTTP response with example.
8. Explain any two of the following :
- (a) System Network Architecture (SNA)
- (b) License Service API
- (c) Client-side Scripting
- (d) While-loop & Do-While loop.
- (e) Grouping classes in packages.

Total No. of Questions : 8] [Total No. of Printed Pages : 3

Paper Code : 21305

F-405

B.C.A. (First Semester)

Examination, 2021-22

(New Course)

Paper-BCA-105-N

Personal Computer Software

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any **five** questions. **All** questions carry equal marks.

1. (a) What is a function in MS-Excel? Explain any four MS-Excel functions.
(b) What is Paintbrush? Explain any four tools of Paintbrush.
2. (a) Explain header and footer in MS-Word.
(b) What is 'autoexec.bat' file? Explain its significance.

(1)

P.T.O.

3. Explain the process of booting. Explain booting of hard drive. Differentiate between cold boot and warm boot.
4. (a) Write the steps to create a powerpoint presentation. Explain the following:
(i) Add new slide
(ii) Add new section
(iii) Add new file.
(b) How can you create a worksheet sequence?
5. (a) What is a paragraph? Explain its attributes.
(b) Explain the steps to create a paragraph.

6. (a) Explain the process of finding and replacing text in MS-Word document.
(b) Explain the different Components of MS-Word briefly.
7. Explain various directory commands of MS-DOS. Also explain use of wildcards. Give appropriate examples.
8. Explain the followings:
 - (i) Computer virus
 - (ii) FAT
 - (iii) Disk organisation
 - (iv) MBR.

<https://www.mjpruonline.com>

Whatsapp @ 9300930012

Send your old paper & get 10/-

अपने पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से

Total No. of Questions : 8] | Total No. of Printed Pages : 4

Paper Code : 21311

F-411

B.C.A. (Third Semester) Examination, 2021-22
(New Course)

Paper - BCA-301-N

Computer Oriented Numerical Analysis

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Discuss the comparison of Newton Raphson with Regula Falsi method.
- (b) Using Lagrange's interpolation formula express $(x^2+6x-1)/(x-1)(x-4)(x-6)$ as a sum of partial fractions.

(1)

P.T.O.

<https://www.mjpruonline.com>

2. (a) What is the accuracy of the method?
- (b) Write a program to find the line of best fit.
3. (a) Given $y(0.2)=1.2$, $y(0.6)=1.8$, predict $y(0.4)$.
- (b) Obtain the data for the following X : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, 1730, 1731, 1732, 1733, 1734, 1735, 1736, 1737, 1738, 1739, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 212

5. (a) State the following two formulae for interpolation (i) Bessel's Formula (ii) Newton's forward difference Formula.
- (b) Derive formula for Newton's Forward difference interpolation.
6. (a) Obtain the smallest positive root of the equation $x^3 - 5x + 1 = 0$, by using three iterations of bisection method.
- (b) For solving a system of linear equations.
- $$a_{11}x_1 + a_{12}x_2 + a_{13}x_3 = b_1;$$
- $$a_{21}x_1 + a_{22}x_2 + a_{23}x_3 = b_2$$
- and
- $$a_{31}x_1 + a_{32}x_2 + a_{33}x_3 = b_3,$$
- by iterative Gauss-Jacobi Method, with initial approximations, $x_1 = 0 = x_2 = x_3$ give formulas for next approximations of x_1, x_2 and x_3 .

7. (a) Using solution (IVP) y [0, 1], u
- (b) Explain
8. (a) If $f(0)$ constr
- (b) Differen and Diff
- (c) give for
- (d) Derive formula
- (e) Explain 2 with e
- (f) Explain
- (g) What coefficient their na

Total No. of Questions : 8] [Total No. of Printed Pages : 3

Paper Code : 21327

F-427

B. C. A. (Sixth Semester)

Examination, 2022

(New Course)

Paper No. BCA-N-602

ARTIFICIAL INTELLIGENCE

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Symbols used have their usual meaning.

1. (a) What do you mean by the term 'AI'? How it is useful in today's world?
- (b) Differentiate heuristic algorithm from solution guaranteed algorithm.

2. (a) Describe n
suitable ex
- (b) Define "Pa
techniques
3. (a) Explain th
with propo
- (b) How Filling
CFG?
4. (a) Explain th
with one c
- (b) What are
5. (a) Describe
examples
- (b) How to re
clauses?
6. (a) What are
"MYCIN

(1)

P.T.O.

21327-F-427

- (b) How “Meta-knowledge” is useful in any Expert System.
7. (a) Explain the term “Pattern Recognition” in detail with its principle using one example.
- (b) How “Lisp” is different from “PROLOG”? Explain clearly with their syntax.
8. Write in brief about any **four** of the following :
- (a) Shanks Conceptual Dependency
 - (b) Semantic Nets
 - (c) DENDRAL
 - (d) Speech Recognition
 - (e) Machine Learning

Total No. of Questions : 8] [Total No. of Printed Pages : 4

Paper Code : 21313

F-413

B.C.A. (Third Semester)

Examination, 2021-22

(New Course)

Paper - BCA-303-N

Data Structures Using C

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any **five** questions. **All** questions carry equal marks.

1. (a) Define algorithm. How do you measure the complexity of algorithm? List the commonly used asymptotic notations.

7

- (b) Draw a binary tree using following traversals:

7

Inorder : DBFEAGCLJHK

Postorder : DFEBGLJKHCA

(1)

P.T.O.

21313-F-413

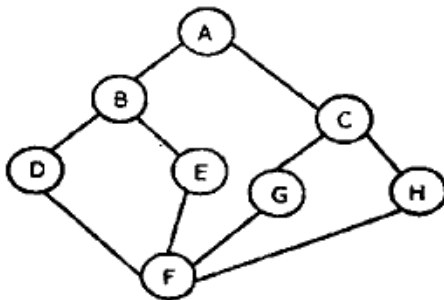
2. (a) Write the corresponding
(i) A*B
(ii) A/B
(b) What is 'C language series up
3. (a) Write an insertion following
100,15,8
(b) What is b search tr
57,25,65
4. (a) Write an in the be
between
(b) What is significant

5. (a) Write the algorithm for binary search.
When is linear search preferred over
binary search. 7

- (b) Define circular queue. What is the condition when the circular queue is full when implemented using array? 7

6. (a) Write the algorithm for multiplication of two matrices. 7

- (b) Differentiate between DFS and BFS.
If 'A' is the starting vertex, find out the DFS & BFS traversal of following graph: 7



7. (a) Write a p
sort.

- (b) Sort the
bubble s
77,33,44

8. Write a short

- (a) Time spa
(b) Garbage
(c) Comparis
(d) Push & p
(e) Polynomi
list.

<https://www.mjpruonline.com>

WhatsApp

Send your

अपने पुराने

Payt

Total No. of Questions : 10] [Total No. of Printed Pages : 4

Paper Code : 21315

F-415

B.C.A. (Third Semester)

Examination, 2021-22

(New Course)

Paper No. BCA-305-N

ORGANISATIONAL BEHAVIOUR

Time : Three Hours]

[Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. What are the principles underlying the conceptual foundations of organizational behaviour? Discuss.
2. Discuss the application areas and importance of the study of organizational behaviour. What

(1)

P.T.O.

is its relationship

fields of study?

3. What is Perception? Discuss the processes of perception. How is perception an employee crucial for an organization?
4. What are the determinants of perception? Enumerate, with suitable examples, the factors responsible for a manager's perception.
5. How is attitude related to perception? Explain the relationship between attitude and perception for smooth functioning of an organization.

6. Explain leadership styles with illustrative examples.

21315-F-415

theory of leadership and state its importance to the organization.

7. What are the stages of Group Development? Explain their importance as well as their relevance. Differentiate between (a) coupling and cohesiveness of groups (b) formal and Informal groups.
8. What is Conflict? What are its sources and types? State and discuss the classification of the different types of conflict and their methods of resolution.
9. What are the approaches to power within an organization? Explain how power can be channelized constructively for achieving improved functionality and productivity.

10. What are the s
the external e
can contribute
within the org

Total No. of Questions : 8] [Total No. of Printed Pages : 4

Paper Code : 21314

F-414

B.C.A. (Third Semester) Examination, 2021-22

(New Course)

Paper No. BCA-304-N

OBJECT ORIENTED PROGRAMMING USING C++

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) What are the elements of Object Oriented Programming? 7
- (b) What are the various loop control statements in C++? Explain briefly. 7

2. (a) What are the elements of Object Oriented Programming? 7
- (b) List the various loop control statements in C++? Explain briefly. 7
3. (a) Define the term 'Object Oriented Programming'. 7
- (b) Differentiate between 'Class' and 'Object'. 7
4. (a) Write a program to calculate the length of a string. 7
- (b) Define the term 'Polymorphism'. 7

(1)

P.T.O.

21314-F-414

5. (a) Explain 'dynamic binding' with the help of an example. Give its advantages and disadvantages. 7

(b) Justify the need of virtual function in C++. 7

6. (a) What are the base and derived classes? Give a suitable example of inheritance. 7

(b) What are constructors and destructors? Explain how they differ from normal functions. <https://www.mjpruonline.com>

7. (a) Define pointers. How the arguments are passed in a function using pointers in C++. 7

(b) Write a C++ program to find the factorial of entered number using recursion. 7

8. Write short following:

(i) Inline

(ii) Variable

(iii) Scope

(iv) Library

(v) Data A

(vi) Break a

Total No. of Questions : 8 | [Total No. of Printed Pages : 3

Paper Code : 21329

F-429

B.C.A. (Sixth Semester)

Examination, 2022

(New Course)

Paper No. BCA-N-604

INTRODUCTION TO .NET

Time : Three Hours / [Maximum Marks : 70

Note : Attempt any **five** questions. All questions carry equal marks. Symbols used have their usual meanings.

1. (a) Describe the .NET framework in detail with its all components.
(b) How .NET framework is useful in development of Internet applications?
2. (a) What is "CLR"? Describe with suitable example.

(b) Elaborate (FCL).

3. (a) Write a compute display th

(b) Explain th

4. (a) What is th recursive

(b) Explain th

5. (a) How inhe in C#? Ex

(b) Describe application

6. (a) What is various ty code to ha

(1)

P.T.O.

21329-F-429

- (b) Explain the concept of GUI-programming.
Summarize all the components involved in developing any GUI-application.
7. (a) What are “Containers”? Explain in detail.
(b) How “multithreading” concept is useful?
Write a small code for creation of a file.
reading into that file and closing that file.
8. Write in brief about any **four** of the following :
- (a) ASP.NET
 - (b) C-Sharp
 - (c) Polymorphism
 - (d) Scoping Rules
 - (e) Database Management Systems

<https://www.mjpruonline.com>

Whatsapp @ 9300930012

Send your old paper & get 10/-

अपने पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से

Total No. of Questions : 8] [Total No. of Printed Pages : 3

Paper Code : 21308
F-408

B.C.A. (Second Semester)

Examination, 2022

(New Course)

Paper No. BCA-N-203

MATHEMATICS-II

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any **five** questions. All questions carry equal marks. Symbols used are as usual.

1. (a) Prove that the system \mathbb{Q} of rational numbers has the Archimedean property i.e. is an Archimedean ordered field.
(b) Show that any open interval is a neighbourhood of each of its points.
2. (a) Find the limit points of the set

$$S = \left\{ \frac{n}{n+1}; n \in \mathbb{N} \right\}$$

(1)

P.T.O.

- (b) Prove that
collection
3. (a) Evaluate :
(b) Examine
continuity
$$f(x) = \begin{cases} x^2 \\ 1 \\ \frac{1}{x} \end{cases}$$

4. (a) If $\langle s_n \rangle$ is
numbers
converging
converges to
(b) Prove that
sequence is
5. (a) Expand $\tan^{-1} x$
(b) Verify Cauchy's criterion
for the function
[1, 2].

21308-F-408

6. (a) Let $f:[0, 1] \rightarrow \mathbb{R}$ be defined by

$$f(x) = (x-1)^2 + 2, \forall x \in [0, 1].$$

Find the equation of the tangent to the graph of this curve which is parallel to the chord joining the points (0,3) and (1,2) of the curve.

- (b) Test for convergence of the series whose n^{th} term is given by $\sqrt{n^2 + 1} + \sqrt{n^2 - 1}$

7. (a) Evaluate : $\lim_{x \rightarrow 0} \left[\frac{(1+x)^{1/x} - e}{x} \right]$

- (b) Show that if the perimeter of a triangle is constant, its area is maximum when it is equilateral.

8. (a) Find the maxima and minima of $(4-3x)^2 e^x$.

- (b) Show that the sequence $\langle s_n \rangle$ where $s_n = \sin n\pi\theta$ and θ is a rational number such that $0 < \theta < 1$, is not convergent.

Total No. of Questions : 8 | Total No. of Printed Pages : 3

Paper Code : 21322
F-422

B.C.A. (Fifth Semester) Examination, 2022-23
(New Course)

Paper-BCA-502-N
COMPUTER NETWORK

Time : Three Hours | Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal i.e.14 marks. Symbols are used have their usual meanings.

1. (a) Differentiate LAN, MAN and WAN.
(b) How OSI reference model is different from TCP/IP model? Explain with the help of blok diagram.
2. (a) Explain the types of various transmission media.

- (b) Describe p
the help of
3. (a) What are th
(b) Differentiat
4. (a) Explain the
sliding wind
(b) Define the f
(i) ALOH
(ii) ATM
5. (a) What are v
Explain each
Also compar
& demerits.
(b) How "Routi
Explain the
routing in de
6. (a) Write clear
and switch.
repeater in a

21322-F-422

P.T.O.

- (b) What is the role of firewall? Illustrate in detail.
7. (a) Describe various services & protocols in the transport layer.
- (b) Summarize all the network security issues and challenges. How to handle with all such issues.
8. Write briefly about any **four** of the following :
- (i) CSMA protocol
 - (ii) X.25
 - (iii) Bridges
 - (iv) Tunneling
 - (v) E-mail protocols

Total No. of Questions : 8] [Total No. of Printed Pages : 4

Paper Code : 21312

F-412

**B.C.A. (Third Semester)
Examination, March-2022**

(New Course)

Paper - BCA-302

Computer Organization

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Explain the concept of gray code with proper example.
- (b) Discuss the procedure of addition & subtraction of numbers using signed 21s complement using one example for each.

(1)

P.T.O.

2. (a) Elaborate A.L.U.
- (b) Multiply algorithm v multiplie
3. (a) How sta sentation
- (b) Describe dress and mats with
4. (a) What are modes? V
- (b) Different
5. (a) Draw a v & explain erence.

(b) Explain the concept of cache memory. What is hit ratio? Suppose there are four memory references that results in a hit and 6 memory reference results in a cache-miss. Calculate the hit ratio.

6. (a) Write in brief about :

- (i) PROMs
- (ii) Page Faults
- (iii) Paging & Segmentation

(b) What are various page replacement policies? Explain each. What do you mean by TLB?

7. (a) How serial bus arbitration is different from parallel bus arbitration? Justify with suitable block diagram.

(b) Discuss the Access with program. When

8. Write short notes on the following:

- (a) K-MAP method
- (b) Interrupts
- (c) SRAM and DRAM
- (d) IEEE floating point
- (e) Octal number

Paper Code : 21318

F-418

**B. C. A. (Fourth Semester)
EXAMINATION, 2019
(New Course)**

Paper No. BCA—N—403

MANAGEMENT INFORMATION SYSTEM

Time : Three Hours]

[Maximum Marks : 70

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Elaborating the terms 'Management', 'Information' and 'System' explain the meaning of 'Management Information System'.
(b) Give structure and classification of MIS.
2. What is a Decision Support System ? With the help of an example, explain relevance and scope of a Decision Support System in an organization.
3. (a) Compare Management Information System and Decision Support System.
(b) Discuss the benefits of Management Information System for an organization.

(B-9) P. T. O.

4. Discuss the security to management of
5. Describe any *two* organizations
(a) Enterprise Resource Planning
(b) MIS versus DSS
(c) Role of Information Technology in organizations
(d) Customer Relationship Management
6. (a) What is the growth of a organization with example
(b) Why is planning important for organization
7. (a) What do you mean by Decision Support System? Discuss the types of Decision Support System.
(b) Give the characteristics of Decision Support System
8. Write short notes on
(a) Supply Chain Management
(b) Use of Information Technology in organization
(c) Efficiency of Information Technology
(d) Tools for Decision Support System
(e) Strategic Decision Support System

21318

Paper Code : 21317
F-417

B. C. A. (Fourth Semester)
EXAMINATION, 2019
(New Course)

Paper No. BCA—N—402

INTRODUCTION TO DBMS AND SQL

Time : Three Hours]

[Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) How many types of data model are for DBMS ? Explain the network model and Hierarchical Model with an example. 7
(b) Draw system architecture of DBMS. List any four significant differences between a life-processing system and a DBMS. 7
2. (a) What is the need of relational model ? Differentiate the relational and non-relational model with example. 7
(b) Write SQL command to Get Supplier Names for Suppliers who supply all Parts. Using the following tables : 7

(B-9) P. T. O.

SUPPLIER
SPNAME {C
PARTS [F
PNAME {C
CITY {CHA
SUP_PARTS
(2)} primary
[Where-S_N
Supplier Nam
Parts Name]

3. (a) What is need following uni
R = {A, B, C
functional dep
R = {AB → C, A
What is the k
and then 3NF.
(b) What do you
Describe their
join dependenc
4. (a) What is datab
of database sys
(b) What is the d
DBMS ? Expla
5. (a) Describe the fo
(i) Data quer
(ii) Concurrer
(b) Compare phys

<http://www.mjpruonline.com>

[3]

6. Consider the following relation :

14

Student (Rollno, Name, Subject, Marks)

Write the SQL of the following :

- (i) Name of students who have secured the highest marks in the class.
- (ii) Name of students who have secured the highest marks in each subject.
- (iii) Sort the students in ascending order of their names.

- 7. (a) What are data models ? Explain advantages and disadvantages of data models. 7
- (b) Compare different types of data models. 7
- 8. (a) What do you mean by integrity constraints ? Explain. 7
- (b) Explain Normalisation. Describe 1NF and 2NF and 3NF with example. 7

<http://www.mjpruonline.com>

Whatsapp @ 9300930012

Your old paper & get 10/-

पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से

Total No. of Questions : 8] [Total No. of Printed Pages : 4

Paper Code : 21313

F-413

B.C.A. (Third Semester)

Examination, 2021-22

(New Course)

Paper - BCA-303-N

Data Structures Using C

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any **five** questions. **All** questions carry equal marks.

1. (a) Define algorithm. How do you measure the complexity of algorithm? List the commonly used asymptotic notations.

7

- (b) Draw a binary tree using following traversals:

7

Inorder : DBFEAGCLJHK

Postorder : DFEBGLJKHCA

(1)

P.T.O.

21313-F-413

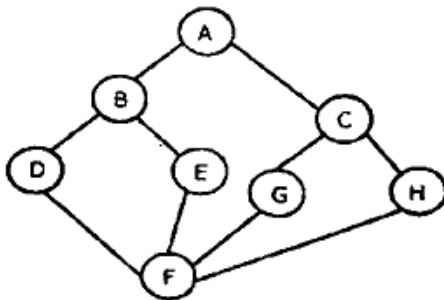
2. (a) Write the corresponding
(i) A*B
(ii) A/B
(b) What is 'C language series up
3. (a) Write an insertion following
100,15,8
(b) What is b search tr
57,25,65
4. (a) Write an in the be
between
(b) What is significant

5. (a) Write the algorithm for binary search.
When is linear search preferred over
binary search. 7

- (b) Define circular queue. What is the condition when the circular queue is full when implemented using array? 7

6. (a) Write the algorithm for multiplication of two matrices. 7

- (b) Differentiate between DFS and BFS.
If 'A' is the starting vertex, find out the DFS & BFS traversal of following graph: 7



7. (a) Write a p
sort.

- (b) Sort the
bubble s
77,33,44

8. Write a short

- (a) Time spa
(b) Garbage
(c) Comparis
(d) Push & p
(e) Polynomi
list.

<https://www.whatsapp.com>
WhatsApp
Send your
अपने पुराने
Payt

Total No. of Questions : 8] [Total No. of Printed Pages : 3

Paper Code : 21321

F-421

B.C.A. (Fifth Semester)

Examination, 2022-23

(New Course)

Paper-BCA-501-N

COMPUTER GRAPHICS AND ANIMATION

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Symbols used have their usual meanings.

1. (a) What is development of computer graphics? Explain it in details. 7
(b) Describe in details color display techniques. 7
2. (a) Explain the frame buffer and bit operations concepts in raster graphics. 7

(b) Differential

(i) Stor

proc

(ii) Rast

grap

3. (a) What is line

it with an e

(b) What is

Describe it

4. (a) Differential

and polygo

(b) What is

Explain it

5. (a) Explain i

constructio

P.T.O.

21321-F-421

- (b) What is 2-D and 3-D transformation?
Explain it with an example. 7
6. (a) What are Bezier curves? State the
mathematical expression of Bezier
curve. 7
- (b) What is 3-D viewing? Explain it in
details. 7
7. (a) Describe the algorithms for 3-D volumes
spline curves and Surfaces in details. 7
- (b) How many types of animation? Explain
it in details. 7
8. Explain the following : 14
- (i) GKS primitive
 - (ii) Multimedia application
 - (iii) Morphing
 - (iv) Tweaking

Total No. of Questions : 8] [Total No. of Printed Pages : 3

Paper Code : 21328

F-428

B.C.A. (Sixth Semester) Examination, 2022

(New Course)

Paper No. BCA-N-603

WEB TECHNOLOGY

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Symbols used have their usual meanings.

1. (a) Explain the terms :
 - (i) WWW
 - (ii) HTTP
 - (iii) HTTPs
 - (iv) POP3
- (b) What is an ISP? Give proper examples to support your answer.

(1)

P.T.O.

2. (a) How to send

(b) Differentiate

✓ 3. (a) How "sea

"web-brow

"Portel"?]

(b) Describe v

✓ 4. (a) Why HT

language?

(b) What are F

different fr

✓ 5. (a) Describe th

(b) How dot n

languages "

✓ 6. (a) What is Jus

(b) Explain the

(i) base c

(ii) dot ne

21328-F-428

~~7~~ (a) Write down the features of ASP.NET. How ASP.NET is different from ASP?

(b) Create any ASP.NET web application.

✓ 8 Write short notes on any **four** of the following :

(a) ADO.NET

(b) Web Services

(c) Versions of HTML

(d) Dynamic Web Page

(e) SMTP and FTP

<https://www.mjpruonline.com>

Whatsapp @ 9300930012

Send your old paper & get 10/-

अपने पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से

Paper Code : 21309
F-409

B. C. A. (Second Semester)
EXAMINATION, 2019
(New Course)

Paper No. BCA—N—204
PROGRAMMING IN 'C'

Time : Three Hours]

[Maximum Marks : 70

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) What is a data type ? Explain various data types available in 'C' language with syntax and examples. 7
(b) What are various categories of operations available in 'C' language ? Describe any *two* category operations. 7
2. (a) What is an array ? How many types of arrays are available in 'C' language ? Explain with proper example. 7
(b) Write a program in 'C' language to display tables from 2 to 20. 7

(B-9) P. T. O.

3. (a) Distinguish between *structured programming* and *unstructured programming* with examples. 7
(b) What is recursion ? Give an example of a recursive function to calculate the factorial of a number. 7
4. (a) How are pointers used in memory management ? Explain *malloc()* and *free()* functions. 7
(b) How call-by-reference is implemented using pointers ? Write a program to swap two variables using pointers. 7
5. (a) What is a loop ? Explain various loop operations with proper examples. 7
(b) What is a nested loop ? Explain with proper examples. 7
6. (a) What is the difference between *local* and *global* variables ? Give proper examples. 7
(b) What is the difference between *static* and *non-static* variables ? Explain their uses. 7
7. (a) What is the difference between *if* and *switch* statements ? Explain with proper examples. 7
(b) Taking suitable examples, explain the use of *break* and *continue* statements. 7

<http://www.mjpruonline.com>

[3]

8. Write short Notes on any *four* of the following :

$3\frac{1}{2}$ each

- (a) Comma operator
- (b) Dynamic memory allocation
- (c) File appending and deleting
- (d) Nested structure
- (e) Union data structure
- (f) Parameter passing methods
- (g) Pointer arithmetic.

<http://www.mjpruonline.com>

Whatsapp @ 9300930012

Your old paper & get 10/-

पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से

21309

<http://www.mjpruonline.com>

(B-9)

Total No. of Questions : 8 | Total No. of Printed Pages : 4

Paper Code : 21316

F-416

B.C.A. (Fourth Semester) Examination, 2022

(New Course)

Paper No. BCA-N-401

Operating System

Time : Three Hours / [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Explain the evaluation of operating system? Differentiate between Multiprogramming, and Time sharing system? 7
- (b) Discuss the following (i) Types of services provided by OS (ii) User's view and System's view of OS. 7

(1)

P.T.O.

21316-F-416

2. (a) Perform C average Preemptive with time Proc
 P_1
 P_2
 P_3
 P_4
- (b) Discuss the Block (i) Context S Termination Interrupt.
3. (a) What do Discuss using Bin
- (b) Discuss " present its

4. (a) What is virtual memory? Explain demand paging. 7
- (b) Explain multiprogramming with fixed partition. 7
5. (a) Explain the concept of paging? Discuss the use of TLB for paging scheme? 7
- (b) Explain the concept of Segmentation? Discuss the concept of Segments Sharing? <https://www.mjpruonline.com> 7
6. (a) Discuss Critical-Section Problem? Define various algorithms that provide the solution for the requirements of critical section problem? 7
- (b) What do you mean by Page Fault? How many Page Faults would occur for following reference string, for four page frames using FIFO, Optimal algorithm?
7 0 1 2 0 3 0 4 2 3 0 3 2 1 7

7. (a) Define Disks. Give an example. 7
- (b) What do you mean by Disk Scheduling? Characterize the different methods for disk scheduling. 7
8. Write short notes on the following: 7
- (a) Time sharing
- (b) OS Compaction
- (c) System deadlock
- (d) Goals of process synchronization
- (e) File operations
- (f) Thrashing

<https://www.mjpruonline.com>
 WhatsApp
 Send your
 अपने पुराने पेपरों को
 Paytm

Total No. of Questions : 8] [Total No. of Printed Pages : 4

Paper Code : 21312

F-412

**B.C.A. (Third Semester)
Examination, March-2022**

(New Course)

Paper - BCA-302

Computer Organization

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Explain the concept of gray code with proper example.
- (b) Discuss the procedure of addition & subtraction of numbers using signed 21s complement using one example for each.

(1)

P.T.O.

2. (a) Elaborate A.L.U.
- (b) Multiply algorithm v multiplie
3. (a) How stack sentation
- (b) Describe dress and mats with
4. (a) What are modes? V
- (b) Different
5. (a) Draw a v & explain erence.

(b) Explain the concept of cache memory. What is hit ratio? Suppose there are four memory references that results in a hit and 6 memory reference results in a cache-miss. Calculate the hit ratio.

6. (a) Write in brief about :

- (i) PROMs
- (ii) Page Faults
- (iii) Paging & Segmentation

(b) What are various page replacement policies? Explain each. What do you mean by TLB?

7. (a) How serial bus arbitration is different from parallel bus arbitration? Justify with suitable block diagram.

(b) Discuss the Access with program. When

8. Write short notes on the following:

- (a) K-MAP method
- (b) Interrupts
- (c) SRAM and DRAM
- (d) IEEE floating point
- (e) Octal number

Total No. of Questions : 8] | Total No. of Printed Pages : 4

Paper Code : 21311

F-411

B.C.A. (Third Semester) Examination, 2021-22
(New Course)

Paper - BCA-301-N

Computer Oriented Numerical Analysis

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Discuss the comparison of Newton Raphson with Regula Falsi method.
- (b) Using Lagrange's interpolation formula express $(x^2+6x-1)/(x-1)(x-4)(x-6)$ as a sum of partial fractions.

(1)

P.T.O.

<https://www.mjpruonline.com>

2. (a) What is the accuracy of the method?
- (b) Write a program to find the line of best fit.
3. (a) Given $y(0.2)=1.2$, $y(0.6)=1.8$, predict $y(0.4)$.
- (b) Obtain the data for the following:
X : 1, 2, 3, 4, 5
Y : 8, 10, 12, 14, 16
By method of least squares.
4. What is the difference between the direct and iterative methods for solving linear equations?

21311-F-411

<https://www.mjpruonline.com>

5. (a) State the following two formulae for interpolation (i) Bessel's Formula (ii) Newton's forward difference Formula.
- (b) Derive formula for Newton's Forward difference interpolation.
6. (a) Obtain the smallest positive root of the equation $x^3 - 5x + 1 = 0$, by using three iterations of bisection method.
- (b) For solving a system of linear equations.
- $$a_{11}x_1 + a_{12}x_2 + a_{13}x_3 = b_1;$$
- $$a_{21}x_1 + a_{22}x_2 + a_{23}x_3 = b_2$$
- and
- $$a_{31}x_1 + a_{32}x_2 + a_{33}x_3 = b_3,$$
- by iterative Gauss-Jacobi Method, with initial approximations, $x_1 = 0 = x_2 = x_3$ give formulas for next approximations of x_1, x_2 and x_3 .

7. (a) Using solution (IVP) y [0, 1], u
- (b) Explain
8. (a) If $f(0)$ constr
- (b) Differen and Diff
- (c) give for
- (d) Derive formula
- (e) Explain 2 with e
- (f) Explain
- (g) What coefficient their na

Total No. of Questions : 9 | Total No. of Printed Pages : 3

Paper Code : 21303

F-403

B.C.A. (First Semester) Examination, 2021-22

(New Course)

Paper - BCA-103-N

Language and Communication

Time : Three Hours | [Maximum Marks : 70]

Note : Attempt any five questions. All questions carry equal marks.

1. What do you understand by the term 'Technical English'? Describe the significance of accuracy and consciousness in Technical English.
2. Describe the principles of business communication.

3. Write a short note on:
 - (i) Effective communication
 - (ii) Office order
 - (iii) Teleconferencing
4. What do you understand by business communication? taken into consideration verbal communication.
5. Give a detailed account of the importance of speaking. http://www.mjpruonline.com
6. Prepare a report on the importance of writing.
7. Which points should be considered while appearing for an examination?
8. Draft an application for a job in a computer and communication field.

21303-F-403

9. Write short note on any **two** of the following :

- (i) Seminar and group discussion
- (ii) Format for thesis
- (iii) Formal communication system

Total No. of Questions : 8] [Total No. of Printed Pages : 3

Paper Code : 21305

F-405

B.C.A. (First Semester)

Examination, 2021-22

(New Course)

Paper-BCA-105-N

Personal Computer Software

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any **five** questions. **All** questions carry equal marks.

1. (a) What is a function in MS-Excel? Explain any four MS-Excel functions.
(b) What is Paintbrush? Explain any four tools of Paintbrush.
2. (a) Explain header and footer in MS-Word.
(b) What is 'autoexec.bat' file? Explain its significance.

(1)

P.T.O.

3. Explain the process of booting. Explain booting from hard drive. Differentiate between a cold reboot and a warm reboot.
4. (a) Write the steps to create a powerpoint presentation using the following:
(i) Add a new slide.
(ii) Add a new slide from the file.
(b) How can you insert a worksheet into a sequence of worksheets?
5. (a) What is a paragraph? Explain its attributes.
(b) Explain the steps to format a paragraph.

6. (a) Explain the process of finding and replacing text in MS-Word document.
(b) Explain the different Components of MS-Word briefly.
7. Explain various directory commands of MS-DOS. Also explain use of wildcards. Give appropriate examples.
8. Explain the followings:
 - (i) Computer virus
 - (ii) FAT
 - (iii) Disk organisation
 - (iv) MBR.

<https://www.mjpruonline.com>

Whatsapp @ 9300930012

Send your old paper & get 10/-

अपने पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से

Total No. of Questions : 8] [Total No. of Printed Pages : 4

Paper Code : 21301

F-401

B.C.A. (First Semester) Examination, 2021-22

(New Course)

Paper - BCA-101

Computer Fundamental and Programming

Time : Three Hours] [Maximum Marks : 70

Note : Attempt any five questions. All question carry equal marks.

1. (a) Draw a block diagram of Computer and explain the function of each of the blocks? 8
- (b) Explain the generation of Computer with their features? 6

(1)

P.T.O.

2. (a) What are the characteristics of primary and secondary storage? with examples.
- (b) Differentiate between primary and secondary storage.
3. (a) Convert the following into decimal:
(i) (17.3)₁₆
(ii) (375)₁₀
(iii) (AB2)₁₆
- (b) What do you mean by point representation of data? ASCII & EBCDIC.
4. (a) Differentiate between High Level Language and Assembly Language.
- (b) Define S.No.

5. (a) Define Algorithm & Draw a flow chart to find greater between Two numbers? 7
 (b) What is structured programming? Discuss about the debugging and testing of programmes? 7
6. (a) Discuss various "C" operators with example. 7
 (b) Differentiate "while" and "Do-while" loop with example. 7
7. (a) What do you mean by Sorting? Describe Bubble sort? <https://www.mjpruonline.com> 7
 (b) What are two - dimensional arrays? Write a program in "C" language to add two matrices of 3×3 . 7
8. Write short notes on any **four** of the following:
 - (a) Central Processing Unit 3.5 each
 - (b) "C" Preprocessor
 - (c) Linear Array

- (d) Program
- (e) "For" loop
- (f) Data type
- (g) Insertion