(Pages : 3) **J – 1419**

Reg. No. : .....

Name : .....

Fourth Semester B.C.A. Degree Examination, March 2020

Career Related FDP under CBCSS

Group2(b)-COMPUTER APPLICATIONS

Core Course – CP 1445

SYSTEM SOFTWARE

(2014 Admission onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions. **1** mark each

1. What is multiprogramming?
2. Define system software.
3. What is the need of using the relocation bit?
4. Name the data structure used to handle the literals.
5. What is the use of a text editor?
6. ———— define a prototype for macro instruction.
7. What is an absolute program?
8. ———— registers are used in relative addressing.

P.T.O.

9. SIC stands for ————

10. Define data format.

SECTION – B

Answer **any eight** questions. **2** marks each

11. What are the advantages of dynamic linking?

12. Give examples for data movement operation of SIC.

13. What is the advantage of including reference number in object programs?

14. How do you solve relocation problem of a program?

15. Distinguish between a literal and an immediate operand.

16. What is forward reference problem in one-pass assembler?

17. Distinguish between plain text and rich text.

18. What are the functions of an assembler?

19. How is loader itself loaded into memory?

20. What are the different loader commands? (any four)

21. Write any two machine independent assembler features.

22. Differentiate between statement and expression.

SECTION – C

Answer **any six** questions. **4** mark each

23. Discuss about different assembler directives.

24. Explain the data structures used in an SIC assembler.

25. How does multi-pass assembler handle forward reference in an ORG statement?

26. Describe the design of a relative loader.

27. What are the functions of a linkage editor?

28. Explain editor structure with a diagram.

29. Write a subroutine to convert ASCII code to hexadecimal.

30. Discuss about different instruction formats.

31. Write a note on interactive debugging systems.

SECTION – D

Answer **any two** questions. **15** mark each

32. Compare the architecture of different versions of SIC.

33. What are the different types of one-pass assemblers? Explain.

34. Write algorithms for both Pass 1 and Pass 2 of a linking loader.

35. Explain the functions of a macro processor.

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Fourth Semester BCA Degree Examination, March 2020

CAREER RELATED FDP UNDER CBCSS

Group 2(b)

CP 1442 VISUAL TOOLS

(2014-17 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very short answer type)

Answer **all** questions.

1. Define event.
2. What is the purpose of project explorer window?
3. ———— property determines the mode in which the form is displayed.
4. Differentiate checkbox and option button.
5. ———— is the storage size of currency data type.
6. Date and time values are denoted with ———— sign.
7. Define class.
8. Expand SDI.
9. ———— function is used to find the length of a string.
10. ODBC stands for ————.

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B (Short Answer)

Answer any **eight** questions.

11. Write any 4 properties of combo box.

12. What is meant by event driven programming?

13. Write the syntax of for loop.

14. How to define constants in VB?

15. What is meant implicit declaration?

16. Compare for .....Next Loop with while ..... wend loop.

17. What is form-activate event?

18. Compare actual and formal parameters.

19. Write the logical operators in VB.

20. Explain runtime error.

21. What is recordset?

22. Define OLE.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions.

23. Explain different mouse events in VB.

24. Create a VB application to generate n Fibonacci numbers.

25. Explain any 2 controls with their properties and methods.

26. Explain field level and form level validation.

27. Explain OLE server.

28. Explain Err object

29. Explain branching statements.

30. Define array and explain.

31. What is scope of a variable? Explain.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions.

32. Explain about visual basic Integrated Development environment.

33. Explain compilation.

34. Write a VB application to convert a decimal number to binary, octal and hexadecimal using option button.

35. Explain in detail how to create reports.

(2 × 15 = 30 Marks)

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Fourth Semester B.C.A. Degree Examination, March 2020

Career Related FDP under CBCSS

Group 2(b) - Computer Applications

Core Course—CP 1442

WEB PROGRAMMING AND PYTHON

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A *[Very Short Answer Type]*

*[One word to maximum of one sentence. Answer **all** questions]*

1. Give two examples for search engines.
2. Write the tags used for creating a paragraph.
3. Which is the tag used for creating newline?
4. Name the tags in HTML for creating moving texts.
5. How will you insert an object at given index in a list?
6. Name the two membership operators.
7. List any two characteristics of Phyton?
8. What is the output of print (tuple + tinytuple) if tuple = ('abcd', 786 , 2.23, 'john', 70.2) and tinytuple = (123, 'John')?

9. How will you replace all occurrences of old substring in string with new string?

10. What is the output of print str[2:] if str = 'Hello World!'?

(10 × 1 = 10 Marks)

SECTION – B [Short Answer]

*[Not to exceed **one** paragraph, answer any **eight** questions.*
*Each question carries **2** marks]*

11. What is a domain name? Give example.

12. What do you mean by a dynamic Web page?

13. What is the purpose of a Web browser?

14. What is the use of <IMG> tag in HTML?

15. Write an HTML code to generate radio buttons in HTML.

16. What is the purpose of POST method?

17. What is <audio> tag in advanced HTML?

18. What is a tooltip?

19. Explain the use of map() function with an example.

20. What is the difference between tuples and lists in Python?

21. What is a Python dictionary?

22. What is the purpose of // operator?

(8 × 2 = 16 Marks)

SECTION – C *[Short Essay]*

*[Not to exceed **120** words, answer any **six** questions.*
*Each question carries **4** marks]*

23. Explain various heading tags with-example.

24. How will you create superscript text and subscript text in HTML?

25. Explain font tag with its attributes in HTML with example.

26. Explain anchor tags in HTML with example.

27. Differentiate absolute URL and relative URL.

28. What are lambda functions? Illustrate the use of lambda functions with an example.

29. Write a recursive function in Python to find the factorial of a number.

30. Explain the concept of mutable and immutable objects.

31. Write a Python program to find the sum of all items in a list received from the user.

(6 × 4 = 24 Marks)

SECTION – D *[Long Essay]*

*[Answer any **two** questions. Each question carries **15** marks]*

32. Explain tags used for creating tables in HTML and its attributes with example.

33. Explain the concept of frames in HTML with example program.

34. Explain decision making statements in Python with syntax and examples.

35. Explain different loops in phyton with suitable example.

(2 × 15 = 30 Marks)

(Pages : 3) **J – 1414**

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Fourth Semester B.Sc./B.C.A. Degree Examination, March 2020

Career Related FDP under CBCSS

Group 2(b) – Computer Science / Computer Applications

Core Course – CS 1442 / CP 1443

DATABASE MANAGEMENT SYSTEMS

(2014-17 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A [Very Short Answer Type]

(**one** word to maximum **one** sentence, Answer **all** questions)

1. Define the job of an Application programmer.
2. What is data independence?
3. Define relationship.
4. What is an instance in DBMS?
5. Define attributes used in ER Model.
6. What is super key?
7. Define metadata.

P.T.O.

8. What is trivial functional dependency?

9. Define 1NF.

10. Write the consistency property of DBMS.

(10 × 1 = 10 Marks)

SECTION – B [Short Answer]

(Not to exceed one paragraph, answer any **eight** questions. Each question carries **two** marks)

11. Explain about mapping cardinalities.

12. Differentiate between physical schema and logical schema.

13. Explain about total participation constraint.

14. Differentiate between stored and derived attributes.

15. Write the syntax of INSERT command with example.

16. Define Natural join.

17. What is data dictionary?

18. Differentiate between physical level and logical level data abstraction.

19. Explain about the different types of data independence.

20. Differentiate between procedural DML and nonprocedural DML.

21. Define BCNF.

22. Define 2NF.

(8 × 2 = 16 Marks)

SECTION – C [Short Essay]

[Not to exceed 120 words, answer any **six** questions. Each question carries **four** marks]

23. Define ACID property.

24. Explain the duties of a Data Base Administrator.

25. Explain about 3 tier architecture.

26. Explain about the different types of constraints used in relational data model.

27. Differentiate between tuple relational calculus and domain relation calculus.

28. Write the syntax and an example of ALTER command.

29. Explain 3NF.

30. Explain about insert, update and delete anomalies.

31. Give the syntax and example of CREATE command

(6 × 4 = 24 Marks)

SECTION - D [LONG ESSAY]

(Answer any **two** questions. Each question carries **15** marks]

32. Explain the fundamental operations of relational algebra.

33. Explain DML commands with example.

34. Discuss how to overcome maintenance issues of DBMS.

35. Define Normalization. Discuss the need and objectives of normalization? Also explain lossless and lossy decomposition.

(2 × 15 = 30 Marks)

(Pages : 3) **J – 1466**

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Name : .....

Fourth Semester B.Sc./B.C.A. Degree Examination, March 2020

Career Related FDP under CBCSS

Group 2(a) Physics and Computer Applications/Group (2b) Computer Applications

Core Course/Vocational Course-PC 1471/CP 1441

SOFTWARE ENGINEERING

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very Short Answer Type)

[One word to maximum of one sentence. Answer **all** questions]

1. Expand DFD.
2. Expand SRS.
3. Name any two software development life cycle model.
4. What do you mean by software process?
5. What is the benefit of iterative development?
6. What is the purpose of quality plan?
7. What do you mean by a software failure?

8. What is a test suite?

9. Name two approaches for test case design.

10. What is statement coverage criterion in testing?

(10 × 1 = 10 Marks)

SECTION – B (Short Answer)

[Not to exceed **one** paragraph, answer **any eight** questions. Each question carries **2** marks.]

11. What are time boxed iterations?

12. What is a specification language?

13. What are the specific requirements in an SRS?

14. What is the purpose of DFD?

15. What do you mean by a modular system?

16. What is test driven development?

17. What do you mean by refactoring?

18. What is code inspection?

19. What is a test case?

20. What is integration testing?

21. What is a test plan?

22. What is black box testing?

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

[Not to exceed **120** words, answer **any six** questions. Each question carries **4** marks]

23. Explain the need for software maintenance.

24. Explain the components of an SRS.

25. Explain the characteristics of good user interface.

26. What are the key planning tasks in project planning?

27. Write short notes on risk management.

28. Explain coupling in software engineering.

29. Explain the steps in software reverse engineering.

30. Explain the concept of CORBA.

31. Write short notes on unit testing.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

[Answer **any two** questions. Each question carries **15** marks]

32. Explain waterfall model and its advantages with a neat diagram.

33. Explain in detail the need for SRS.

34. Briefly explain COCOMO model.

35. Explain the concept of class diagrams with example.

(2 × 15 = 30 Marks)

(Pages : 3) **J – 3025**

Reg. No. : .....

Name : .....

Fourth Semester B.C.A. Degree Examination, June 2020

Career Related FDP Under CBCSS

Group 2(b) – Computer Applications

Core Course – CP 1444

DATA MINING AND WAREHOUSING

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

(Very Short Answer Type)

(One word to maximum of one sentence, Answer **all** questions)

1. Define Data mining.
2. What is OLAP?
3. Define clustering.
4. What is classification?
5. What is decision tree?
6. Define prediction.
7. What is a data cube?
8. Define star schema.

9. What are outliers?

10. What is meant by pattern?

(10 × 1 = 10 Marks)

SECTION – B

(Short Answer Type)

(Not to exceed one paragraph, answer any **eight** questions each question carries **2** marks)

11. List the data mining functionalities.

12. What are the applications of data mining?

13. Explain the various schemas of a data warehouse.

14. Differentiate text mining and web mining.

15. Explain parametric and non-parametric methods of data reduction.

16. What are the features of data warehouse?

17. How to classify frequent pattern mining?

18. What is an association rule?

19. Explain the concept of integration of data mining system.

20. What are the requirements of clustering techniques in data mining?

21. What is concept hierarchy explain with an example?

22. Explain the concept of apriori algorithm.

(8 × 2 = 16 Marks)

SECTION – C

(Short Essay)

(Not to exceed **120** words, answer any **six** questions each question carries **4** marks)

23. Explain the different sources of information for data in data mining.
24. What is the difference between operational database and data ware house?
25. Explain major tasks in data pre-processing.
26. What is the difference between data warehouse and data mart?
27. What are multidimensional data models? Give an example.
28. What are the major issues faced in data mining?
29. What are the issues in classification and prediction?
30. Explain different hierarchical methods in cluster analysis.
31. Explain data mining techniques.

(6 × 4 = 24 Marks)

SECTION – D

(Long Essay)

(Answer any **two** questions each question carries **15** marks)

32. Explain with diagram, the various steps involved in KDD process.
33. Explain three-tier data warehouse architecture and its components.
34. Explain the OLAP operation in multidimensional data model with an example.
35. What is Bayesian Classifiers? With an example describe how to predict a class label using naïve Bayesian classification.

(2 × 15 = 30 Marks)

BCD

(Pages : 3) **J – 1413**

Reg. No. : .....

Name : .....

Fourth Semester BCA/B.Sc. Degree Examination, March 2020

Career Related FDP under CBCSS

Group2(b) – COMPUTER APPLICATIONS/COMPUTER SCIENCE

Core Course – CP 1444/CS 1441

DESIGN AND ANALYSIS OF ALGORITHMS

(2014 – 2017 Admissions)

Time : 3 Hours Max. Marks : 80

SECTION – A [Very short answer type]

(One word to maximum one sentence. Answer **all** questions)

1. What is algorithm?
2. What is time efficiency?
3. Which algorithm design strategy is used to find single shortest path?
4. Give an example for exponential complexity.
5. What are NP hard problems?
6. What are implicit constraints?
7. What is Principle of Optimality?
8. What do you mean by bounding function?

P.T.O.

9. What are spanning trees?

10. What is the complexity of quick sort?

(10 × 1 = 10 Marks)

SECTION – B [short answer]

[Not to exceed one paragraph, answer **any eight** question. Each question carries **2** marks]

11. What are the properties of good algorithm?

12. Explain the methods of specifying an algorithm.

13. Explain the basic asymptotic notations in time complexity?

14. Explain the Tower of Hanoi problem.

15. Explain binary search using divide and conquer technique.

16. Discuss the difference between Deterministic and Non-Deterministic algorithms.

17. Explain LC search.

18. Explain Greedy method with an example.

19. Distinguish between space complexities and time complexities.

20. Explain knapsack problem.

21. What is multistage graph?

22. Explain the control abstraction for back tracking technique.

(8 × 2 = 16 Marks)

SECTION – C [short essay]

[Not to exceed 120 words, answer **any six** questions. Each question carries **4** marks]

23. Write an algorithm for finding the maximum and minimum from a set of n numbers.

24. Discuss the Stassen's matrix multiplication.

25. Distinguish between dead node and live node.

26. Describe eight queens problem using backtracking.

27. Distinguish between Worst case and Average case.

28. Explain Prim's algorithm to find minimum cost spanning trees.

29. Explain single source shortest path problem.

30. What are the features of dynamic programming?

31. How do you determine the efficiency of back tracking?

(6 × 4 = 24 Marks)

SECTION – D [long essay]

[Answer **any two** questions. Each question carries **15** marks]

32. Explain quick sort algorithm. Compare the complexities with merge sort and quick sort.

33. Explain travelling sales person's problem.

34. Describe the multi stage graph problem using dynamic programming.

35. Explain the algorithm of all pairs of shortest path problem.

(2 × 15 = 30 Marks)

(Pages : 3) **J – 1417**

Reg. No. : .....

Name : .....

Fourth Semester B.C.A. Degree Examination, March 2020

Career Related FDP under CBCSS

Group 2(b) — Computer Applications

Core Course – CP 1441 — INTRODUCTION TO INFORMATION SECURITY

(2014 – 17 Admissions)

Time : 3 Hours Max. Marks : 80

SECTION – A

(Very short answer type)

One word to maximum of one sentence. Answer **all** questions. **Each** question carries **1** mark.

1. What is an active attack?

2. Define authorization.

3. DSS stands for.

4. Explain virus.

5. Define authentication.

6. Briefly define the monoalphabetic cipher.

7. IP stands for.

P.T.O.

8. What is cryptology?

9. DES stands for.

10. The address size of IPv6.

(10 × 1 = 10 Marks)

SECTION – B

(Short answer type)

Not to exceed **1** paragraph. Answer **any eight** questions. **Each** question carries **2** marks.

11. Explain information security.

12. How many keys are required for two people to communicate via a cipher?

13. Explain the services provided by ESP.

14. Explain TROJANS HORSE.

15. Briefly define the Caesar cipher.

16. Explain asymmetric encryption.

17. Which are the applications of S/MIME?

18. Explain spyware.

19. What are the various modes of operation?

20. Explain the working of anti-virus software.

21. Explain IPv6.

22. What are the limitations of firewall?

(8 × 2 = 16 Marks)

SECTION – C

(Short Essay)

Not to exceed **120** words. Answer **any six** questions. **Each** question carries **4** marks.

23. Define the steps in digital signature algorithm.

24. Explain the different protocols in SSL.

25. State the basic network security terminology.

26. Compare IPv4 and IPv6.

27. What are the different types of worms?

28. Comparison of PGP and S/MIME

29. Explain transposition ciphers.

30. State Information Technology Act 2000/2008.

31. Write a note on Law of Convergence.

(6 × 4 = 24 Marks)

SECTION – D

(Long Essay)

Answer **any two** questions. **Each** question carries **15** marks.

32. Explain Data Encryption Standards in detail.

33. Explain internet protocol security.

34. Explain RSA algorithm in detail.

35. What are the different techniques used for e-mail security? Explain it.

(2 × 15 = 30 Marks)

(Pages : 3) **J – 1465**

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Name : .....

Fourth Semester B.C.A./B.Sc. Degree Examination, March 2020

Career Related FDP Under CBCSS

Group2(b)– Computer Applications/Computer Science

Core Course- CS 1444/CP 1443

PHP AND MYSQL

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A [Very Short Answer Type]

(Answer **all** questions. Each question carries **1** mark)

1. What is FTP?
2. Which tag is used to insert line break in HTML code?
3. How to set cookies in PHP?
4. What is DHTML?
5. What is a dynamic website?
6. How to do single line comments in PHP?
7. What is "print" in PHP?
8. What is the default file extension of PHP?
9. How to include a file to a PHP page?
10. What is database management system?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B [Short Answer]

(Answer **any eight** questions. Each question carries **2** marks)

11. Differentiate between require and include?

12. Briefly explain the control structures in PHP.

13. What are the two methods to display text with a PHP script?

14. What is session? How to initiate a session in PHP?

15. What is the differences between $a != $b and $a !== $b?

16. Which function is used in PHP to check the data type of any variable?

17. How do you retrieve data from the database?

18. What are the advantages of MySQL?

19. What happens when an AUTO INCREMENT column reach maximum value in the table?

20. What do you mean by % and - in the LIKE statement?

21. What is the different between NOW() and CURRENT_DATE ()?

22. Which MySQL function is used to concatenate string? Explain with example.

(8 × 2 = 16 Marks)

SECTION – C [Short Essay]

(Answer **any six** questions. Each question carries **4** marks)

23. What is the difference between indexed and associative array?

24. What is the difference between GET and POST methods in PHP?

25. Explain setcookie() function in PHP.

26. What are the different privileges for users in MySQL?

27. Explain the DDL commands in MySQL.

28. In how many ways can you embed PHP code in an HTML page?

29. What are MySQL triggers and how are they used?

30. How to set up a connection with MySQL in PHP?

31. What are the functions used for sorting arrays in PHP?

(6 × 4 = 24 Marks)

SECTION – D

(Answer **any two** questions. Each question carries **15** marks)

32. Explain various data types available in PHP.

33. Briefly explain about user defined and built-in functions in PHP.

34. Explain the DDL commands in MySQL with examples. Show how to implement constraints like primary key, foreign key, not null and check constraints in MySQL.

35. Explain the DML commands in MySQL with examples.

(2 × 15 = 30 Marks)

(Pages : 3) **J – 1466**

Reg. No. : .....

Name : .....

Fourth Semester B.Sc./B.C.A. Degree Examination, March 2020

Career Related FDP under CBCSS

Group 2(a) Physics and Computer Applications/Group (2b) Computer Applications

Core Course/Vocational Course-PC 1471/CP 1441

SOFTWARE ENGINEERING

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very Short Answer Type)

[One word to maximum of one sentence. Answer **all** questions]

1. Expand DFD.
2. Expand SRS.
3. Name any two software development life cycle model.
4. What do you mean by software process?
5. What is the benefit of iterative development?
6. What is the purpose of quality plan?
7. What do you mean by a software failure?

8. What is a test suite?

9. Name two approaches for test case design.

10. What is statement coverage criterion in testing?

(10 × 1 = 10 Marks)

SECTION – B (Short Answer)

[Not to exceed **one** paragraph, answer **any eight** questions. Each question carries **2** marks.]

11. What are time boxed iterations?

12. What is a specification language?

13. What are the specific requirements in an SRS?

14. What is the purpose of DFD?

15. What do you mean by a modular system?

16. What is test driven development?

17. What do you mean by refactoring?

18. What is code inspection?

19. What is a test case?

20. What is integration testing?

21. What is a test plan?

22. What is black box testing?

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

[Not to exceed **120** words, answer **any six** questions. Each question carries **4** marks]

23. Explain the need for software maintenance.

24. Explain the components of an SRS.

25. Explain the characteristics of good user interface.

26. What are the key planning tasks in project planning?

27. Write short notes on risk management.

28. Explain coupling in software engineering.

29. Explain the steps in software reverse engineering.

30. Explain the concept of CORBA.

31. Write short notes on unit testing.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

[Answer **any two** questions. Each question carries **15** marks]

32. Explain waterfall model and its advantages with a neat diagram.

33. Explain in detail the need for SRS.

34. Briefly explain COCOMO model.

35. Explain the concept of class diagrams with example.

(2 × 15 = 30 Marks)