Reg. No. : .....

D 3152

Q.P. Code : [DT 107/ DT 1 C 07]

(For the candidates admitted from 2007 onwards)

U.G. DEGREE EXAMINATION, JUNE 2008.

First Year

பகுதி I — தமிழ்

தாள் — I — செய்யுள் மற்றும் உரைநடை

Time : Three hours

Maximum : 100 marks

எவையேனும் ஐந்து வினாக்களுக்குக் கட்டுரை வடிவில் விடை தருக.

(5 × 20 = 100)

1. பாரதியின் கனவு பாரததேசம் கவிதை வழி புலப்படுவதை விவரி.

2. பாரதிதாசன் கவிதை உணர்த்தும் நம் நாட்டு நிலை யாது?

3. ஒப்பிலா சமுதாயத்தின் மாண்புகள் யாவை?

4. ஆள்வினையுடைமை அதிகாரச் செய்திகளை எழுதுக.

5. ஆசைகளைச் சீரமைக்க வேண்டியதன் அவசியத்தினை ஆராய்க.

6. பெரியாரின் சமதர்மக் கொள்கை குறித்து எழுதுக.

7. சோ.ந. கந்தசாமி கூறும் தமிழர் பண்பாட்டினை விளக்குக.

8. தியாகமற்ற வழிபாடு - விளக்குக.

Reg. No. : .....

D 3153 Q.P. Code : [DE 107/ DE 1 C 07]

(For the candidates admitted from 2007 onwards)

U.G. DEGREE EXAMINATION, JUNE 2008.

First Year

Part II — English

ENGLISH – I

Time : Three hours Maximum : 100 marks

Answer any FIVE of the following.

Choose any FIVE out of the eight questions given.

All questions carry equal marks.

(5 × 20 =100)

Answer the following each in about 400 words.

1. How did the selfish giant find his way to heaven?

2. What impressions do you form of Lalajee and Jim Corbett from Corbett's account?

3. How does Mansfield bring out his belief that happiness is the essence of life?

4. Attempt a critical appreciation of Wordsworth's Lucy Gray.

5. Sketch the character of Shylock from your reading of the trial scene.

6. Examine the appropriateness of the title, The Eyes Are not There.

7. Answer any FOUR in about 100 words each.

(a) Why did the model for Judas Iscariot become increasingly agitated as the portrait developed?

(b) Describe Midas' second meeting with the stranger.

(c) How did Matilda fall a victim to her infirmity of telling dreadful lies?

(d) 'He knelt him at that word'. Account for Peter Gilligan's gesture.

(e) What is the central theme of The Informer?

(f) Account for the fear of death of Schatz.

8. Rewrite as directed

(a) We believe him

(Change into (i) Negative and (ii) Question)

(b) She hasn't spoken to me.....

(Complete the sentence with (i) more than two years (ii) last week)

(c) We _____ (walk) to the station when it _____ (begin) to rain

(Fill in the blanks with suitable forms of the verb given in the bracket)

(d) (i) He is a best friend of mine.

(ii) I shall call on him when he will come

(Correct the sentences, if necessary)

(e) (i) They have made my brother the captain.

(ii) Poverty drove him to desperation.

(Change into passive voice)

(f) "Who has dared to wound you", cried the giant, "tell me, that I may take my big sword and slay him"

(Change into reported speech)

(g) My wife never agrees _____ me_____ anything

(Fill in the blanks with suitable prepositions)

(h) He is _____ honourable man

He is _____ one-eyed beggar I told you about

(Fill in the blanks with suitable articles, if necessary)

(i) Give the verb forms from which the following nouns have been derived :

Foundation, Service, Reception, Success.

(j) Give the adjectival forms of the following :

Marvel, Wonder, Spectacle, Sorrow.

Reg. No. : .....

D 3012 **Q.P. Code : [07 DIT 01]**

(For the candidates admitted from 2007 onwards)

B.Sc. DEGREE EXAMINATION, JUNE 2008.

First Year

Part III — Information Technology (SDE)

Allied I — MATHEMATICAL FOUNDATIONS FOR COMPUTER SCIENCE

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

1. (a) Evaluate :

$$\begin{vmatrix} 1+a_1 & a_2 & a_3 & a_4 \\ a_1 & 1+a_2 & a_3 & a_4 \\ a_1 & a_2 & 1+a_3 & a_4 \\ a_1 & a_2 & a_3 & 1+a_4 \end{vmatrix} \quad (10)$$

(b) Solve the equation

$$\begin{vmatrix} x-4 & x+1 & x-2 \\ x+1 & x-5 & x-1 \\ x-2 & x+3 & x-6 \end{vmatrix} = 0 \quad (10)$$

2. (a) Define the rank of a matrix. (2)

(b) Find the rank of the matrix. (8)

$$\begin{bmatrix} 1 & 1 & -1 & 1 \\ 1 & -1 & 2 & -1 \\ 3 & 1 & 0 & 1 \end{bmatrix}$$

(c) Show that

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & -2 & 1 \\ 4 & 2 & 1 \end{bmatrix}$$ (10)

satisfies the equation $A^3 - 23A - 40I = 0$.

Hence find A^{-1}

3. (a) Prove that union of sets and intersection of sets are associative. (10)

(b) Write De Morgan's laws. (2)

(c) Prove De Morgan's laws using Venn diagram. (8)

4. (a) What is tautology? Contradiction? (4)

(b) Construct the truth table for each of the following formulae. Which of the formulae are tautologies? (16)

(i) $(p \to q) \to (\neg q \to \neg p)$

(ii) $(p \to q) \to (q \to p)$

(iii) $(p \wedge (p \leftrightarrow q)) \to q$

(iv) $p \to (p \vee q)$.

5. (a) Show that

$$(\forall x)(P(x) \vee Q(x)) \Rightarrow (\forall x) P(x) \vee (\exists x) Q(x)$$

(10)

(b) Is the following conclusion validly derivable from the premises given?

If $(\forall x)(P(x) \rightarrow Q(x)); (\exists y) P(y)$, then $(\exists z) Q(z)$ (10)

6. (a) Write the definitions of

(i) one-to-one

(ii) onto

(iii) many-to-one

(iv) identify functions. (8)

(b) Write all possible functions from $X = \{1, 2\}$ to $y = \{a, b, c\}$ and classify them into one-to-one, onto, neither one-to-one nor onto types of functions. (12)

7. (a) Let G be an undirected graph. Then prove that G is bipartite iff it contains no odd cycle. (10)

(b) Show that a simple digraph is strongly connected iff there is a closed directed walk in G which includes each node atleast once and no isolated node. (10)

2. (a) Define the rank of a matrix. (2)

(b) Find the rank of the matrix. (8)

$$\begin{bmatrix} 1 & 1 & -1 & 1 \\ 1 & -1 & 2 & -1 \\ 3 & 1 & 0 & 1 \end{bmatrix}$$

(c) Show that

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & -2 & 1 \\ 4 & 2 & 1 \end{bmatrix}$$ (10)

satisfies the equation $A^3 - 23A - 40I = 0$.

Hence find A^{-1}

3. (a) Prove that union of sets and intersection of sets are associative. (10)

(b) Write De Morgan's laws. (2)

(c) Prove De Morgan's laws using Venn diagram. (8)

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(i) $(p \to q) \to (\neg q \to \neg p)$

(ii) $(p \to q) \to (q \to p)$

(iii) $(p \wedge (p \leftrightarrow q)) \to q$

(iv) $p \to (p \vee q)$.

5. (a) Show that

$$(\forall x)(P(x) \vee Q(x)) \Rightarrow (\forall x) P(x) \vee (\exists x) Q(x)$$

(10)

(b) Is the following conclusion validly derivable from the premises given?

If $(\forall x)(P(x) \rightarrow Q(x)); (\exists y) P(y)$, then $(\exists z) Q(z)$ (10)

6. (a) Write the definitions of

(i) one-to-one

(ii) onto

(iii) many-to-one

(iv) identify functions. (8)

(b) Write all possible functions from $X = \{1, 2\}$ to $y = \{a, b, c\}$ and classify them into one-to-one, onto, neither one-to-one nor onto types of functions. (12)

7. (a) Let G be an undirected graph. Then prove that G is bipartite iff it contains no odd cycle. (10)

(b) Show that a simple digraph is strongly connected iff there is a closed directed walk in G which includes each node atleast once and no isolated node. (10)

8. Prove that the following statements are equivalent for a graph G with n vertices $(n \geq 2)$.

(a) G is a tree

(b) Any two distinct vertices of G are joined by a unique path

(c) G is minimally connected

(d) G is connected and has n -1 edges

(e) G is acyclic and has n - 1 edges.

$(4 + 4 + 4 + 4 + 4 = 20)$

Reg. No. : .....

D 3013 Q.P. Code : [07 DIT 02]

(For the candidates admitted from 2007–2008 onwards)

B.Sc. DEGREE EXAMINATION, JUNE 2008.

First Year

PART III — Information Technology

DIGITAL FUNDAMENTALS AND ARCHITECTURE

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100)

1. (a) Convert the decimal number $(512.5)_{10}$ into equivalent binary, octal and hexadecimal numbers. (9)

(b) Explain about parallel binary adder with neat diagram. (6)

(c) Prove Demorgan's theorem. (5)

2. (a) Explain BCD adder with diagram. (10)

(b) Implement the following Boolean expression using NAND gates only. $Y = A + \overline{B}C + AC$. (10)

3. (a) Using Karnaugh map simplify the following :

$f(A, B, C, D) = \Sigma(2, 3, 5, 6, 7, 9, 11, 13)$. (10)

(b) Write about synchronous counters. (10)

4. (a) Explain JK master-slave flip-flop. (10)

(b) Write about multiplexers. (10)

5. (a) With neat diagram write about the architecture of 8085. (10)

(b) Write the addressing modes of 8085. (10)

6. (a) Explain Daisy-Chaining priority. (10)

(b) Explain DMA controller. (10)

7. Illustrate the Virtual Memory Concept. (20)

8. Write a note on Main memory. (20)

Reg. No. : .....

D 3014 **Q.P. Code : [07 DIT 03]**

(For the candidates admitted from 2007 onwards)

B.Sc. DEGREE EXAMINATION, JUNE 2008.

First Year

Part III — Information Technology

DATA STRUCTURES AND C PROGRAMMING

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 =100)

1. Discuss about problem solving techniques.

2. Explain – Loop control statements.

3. Write about functions. Write a program to find the factorial a number using recursive functions.

4. What is meant by FILE? Discuss in detail about it.

5. (a) Differentiate structure and union with example.

(b) Explain about command line arguments.

6. Write about stack.

7. Short notes on :

   (a) Doubly linked list.

   (b) Insertion sort.

8. Explain different methods of Searching.
