

HALL TICKET NO:



ST. ANTHONY'S COLLEGE, SHILLONG

**ENTRANCE TEST FOR ADMISSION INTO
GRADUATE PROFESSIONAL COURSES
2006**

COMPUTER SCIENCE

DATE : 2 June 2006
TIME : 2.00 pm - 4.00 pm
DURATION : 2 hours

INSTRUCTIONS

- ◆ There are 40 questions in this test, divided into three parts. All the questions are to be answered on the question paper itself.
- ◆ The candidate is to answer as many questions as possible in the time that is allotted for this test.
- ◆ The required rough work may be done at the bottom of the question paper in the space provided for the purpose.
- ◆ Make sure that you have entered the hall ticket number properly in the place provided above. Enter only the hall ticket number of Computer Science.
- ◆ Please preserve your hall tickets. They will be required at the time of admission.
- ◆ The hall ticket numbers of those shortlisted for admission on the basis of the entrance test will be published on the college notice boards on 3rd June, 2006 and on the college web site on 2 June, 2006 (today).

Part A

Directions for questions in part A (questions 1 - 10) : Answer the following questions by writing the correct answer in the box provided after each question. Each correct answer carries one mark. For each wrong answer .25 mark will be deducted.

1. A parallel plate capacitor is charged by a battery which is then disconnected. The space between the plates is then filled with a dielectric. Due to the introduction of the dielectric, the charge in the plates
 - a. Increases
 - b. Decreases
 - c. Remains unchanged
 - d. Depends of the characteristics of the dielectric introduced

2. Around an electric charge at rest,
 - a. there is a magnetic field
 - b. there is no magnetic field
 - c. there is an electric current
 - d. there is a potential difference

3. Two long parallel wires carry equal currents in the same direction. The force between the wires
 - a. is repulsive, tending to take the wires far apart
 - b. is attractive, tending to bring the wires closer
 - c. there is no force between them
 - d. is negligible

4. Which of the following waves cannot be polarized?
 - a. Radio waves
 - b. X rays
 - c. Transverse waves in a string
 - d. Longitudinal waves in a gas

5. A rate-meter measures the number of disintegrations per second from a radio-active source. Initially it gives a count of 320 disintegrations per second. Ninety minutes later, it gives a count of 40 disintegrations per second. The half life of the radioactive source is
 - a. 30 minutes
 - b. 45 minutes
 - c. 60 minutes
 - d. 75 minutes

6. The frequency of a charge circulating at right angles to an uniform magnetic field does not depend up on
 - a. the speed of the charge
 - b. the mass of the charge
 - c. the charge of the particle
 - d. the magnetic field

7. The property of a fluid by which molecules of the same kind of fluid are attracted is called
 - a. cohesion
 - b. adhesion
 - c. surface tension
 - d. elasticity

8. Solids are not used as thermometric substance because
 - a. they are heavy
 - b. their expansion is small
 - c. their expansion is not uniform
 - d. they are costly

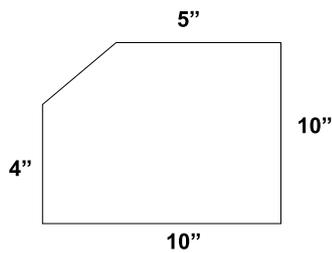
Rough Work

9. The weight of an object
- is the gravity of the matter it contains
 - refers to its inertia
 - is the same as mass but expressed in different unit
 - is the force with which it is attracted to the earth
10. When a bucket containing water loops a vertical loop, water does not fall down when it is at the highest point. This is because its weight is supported by
- Centrifugal force
 - Centripetal force
 - Gravitational force
 - Unknown force

Part B

Directions for questions in part B (questions 11 - 20) : Answer the following questions in short. Each correct answer carries one mark. There is no negative marking.

11. A corner of a square tile is cut off, leaving the piece shown above, what is the area of this piece?



12. $(10-1) \times (10-9) \times (9-8) \times (8-7) \times (7-6) \times (6-5) \times (5-4) \times (4-3) \times (3-2) \times (2-1) \times (1-0) = ?$

13. A frog tries to come out from a dried well 9m deep. Every time the frog jumps 60cm and falls back 30cm. How many jumps the frog would need to get out of the well?

Rough Work

14. The average age of three persons is 30 years. If the ratio of their ages is 3:5:7, what is the age of the youngest person?
15. Which is the wrong number in the sequence 10, 14, 28, 32, 64, 68, 132?
16. A rectangle is 14 cm long and 10 cm wide. If the length is reduced by x cms and its width is increased also by x cms so as to make it a square then its area changes by how many cms?
17. 33% marks are required to pass an examination. A candidate, who gets 210 marks, fails by 21 marks. What is the total mark in the examination?
18. The average salary per month of 30 employees in a company is Rs 4000. If the manager's salary is added, the average salary increases to Rs 4300, what is the salary of the manager?

Rough Work

19. The sum of two numbers is 40 and their difference is 4. Find the ratio in their numbers.
20. One store, Big Bazaar, reduces the price each week of a Rs.100 tea set by 10 percent of the original price. Another store, Shoppers Stop, reduces the price each week of the same Rs.100 tea set by 10 percent of the previous week's price. After 2 weeks, how will the prices at the two stores compare?

Part C

Directions for questions 20 - 40 : Write the steps to arrive at the correct answer to these questions. Each question carries 4 marks.

Directions for questions 21 to 22:- If according to a certain code:

"Mar tar gar zar" means "can we start immediately"

"har zar par dar" means "No you start tomorrow"

"dar sar kar tar" means, "can you come here"

"yar par mar sar" means, "No we stay here".

21. What is the code for "stay"?

22. What does "dar" mean?

Rough Work

23. An octagonal table is marked A to H consecutively in clockwise fashion. Initially, a black ball is placed at corner A, and a white ball at the corner E. The black ball always moves one corner clockwise at a time. The white ball moves anticlockwise. At the first move, the white ball goes to the next corner. During the second move, it misses one corner and goes to the second corner. Similarly, next time it misses two corners and moves to the third corner, and so on. In how many moves and in which corner will the two balls be come together?

Directions for Questions 24 to 27 : In a parking lot, seven company automobiles are lined up in a row in seven adjacent parking spots. There are two vans, which are both adjacent to the same sports car. There is one station wagon. There are two limousines, which are never parked adjacent to each other. One of the sports cars is always on one end.

24. If the station wagon is on one end, then what are the positions of the sports cars?

25. If one of the vans is on one end, then the station wagon may be in which position(s)?

26. If one of the sports cars is in the 2nd spot, then which automobile is in the 5th spot?

Rough Work

27. If both sports cars are adjacent to a van, the station wagon may be in which position(s)?

28. In a row of boys A is 13th from left and D is 17th from right. If in this row A is 11th from right then what is position of D from the left?

Directions Question 29 to 32: Study the following information carefully and answer the questions given below it:

There are six persons A, B, C, D, E and F. C is the sister of F. B is the brother of E's husband. D is the father of A and grandfather of F. There are two fathers, three brothers and a mother in the group.

29. Who is the mother?

30. Who is E's husband?

Rough Work

31. How many male members are there in the group?

32. How is F related to E?

Directions for the Questions 33 to 37

Study the following information carefully and answer the questions given below.

Seven specialist doctors B, M, K, P, D, F and H visit a polyclinic on four days – Tuesday, Wednesday, Friday and Saturday – in a week. At least one doctor but not more than two doctors visit the polyclinic on each of these days. Each of them is a specialist in different fields – ENT, Orthopaedics, Paediatrics, Neurology, Ophthalmology, Radiology and Oncology.

- a) P visits on Friday with Radiologist.
- b) The Paediatrician does not visit on Saturday nor with D and H.
- c) The Oncologist F visits alone on Tuesday.
- d) M Visits on Wednesday and he is not Paediatrician.
- e) K visits on Wednesday. H is not Radiologist.
- f) The Paediatrician visits with the ENT specialist.
- g) The Neurologist visits on Friday.
- h) B is neither Orthopaedician nor Radiologist

33. What is the speciality of B?

34. On which day of the week does D visit?

Rough Work

35. Who among them visits the polyclinic along with B?

36. On which of the following days do the specialists in Orthopaedics and Ophthalmology visit?

Directions for Questions 37 to 40:

Read the following information carefully and give your decision (To be recruited / NOT to be recruited / to be referred to the Chairman / to be referred to the Managing Director / data inadequate to decide), giving reasons for your answer. You are not to assume beyond the facts supplied. The cases are given to you as on 1.6.2003.

Following are the criteria for recruiting Managers for an organization. The candidate must

- a) Be a graduate with at least 60% marks or a post-graduate with at least 60% marks either at graduation or at post-graduation.
 - b) Not be less than 23 years and not more than 30 years as on 1.6.2003.
 - c) Have secured at least 50% in the competitive written examination and at least 40% marks in the interview.
 - d) Have at least three years work experience after completing graduation and / or post-graduation.
- However, if a candidate fulfils all the criteria except
- e) at (a) above but has obtained a Ph.D. degree, his / her case is to be referred to the Managing Director
 - f) at (b) above but has put in more than five years of work experience, his / her case is to be referred to the Chairman.
37. Adesh Kulkarni has secured 65% marks in his post-graduation. He was born on 21 April, 1976. He has secured 55% and 45% marks in the competitive written examination and interview respectively. He has been working for the last five years after his post-graduation.

Rough Work

38. Suresh Oberoi secured 65% marks in post-graduation at the age of 26 in the year 1997. He has been working since then. He has secured 55% and 40% marks in the competitive written examination and interview respectively.
39. Vidish Ghosh has secured 65% and 60% marks in the competitive written examination and interview. She has also secured here Ph.D. degree. She was born on 25th November, 1976. She has secured 55% marks in both graduation and post-graduation.
40. Jayant Desai was 28 years old as on 1.7.2001. He has secured 45% and 60% marks in graduation and post-graduation respectively. He has been working for the last three years after his post-graduation. He has secured 60% marks in the interview.

Rough Work