

ROYAL CIVIL SERVICE COMMISSION

Civil Service Common Examination for Technical Graduates

Paper II: General Subject Knowledge – IT

15 November 2007

Instructions:

1. The writing time for paper is **ONE AND HALF HOURS**
2. The paper is divided into two parts: Part I and Part II. All questions in both the parts are **COMPULSORY**
3. Correct Answers to all question in Part I will be awarded equal marks of **ONE (1)** each.
4. Correct and complete answers to all questions in Part II will be awarded equal marks of **THREE (3)** each.
5. All answers must be written on the question Book itself, within the space provided for each question

Part I

(Marks 70 x 1)

Multiple choice questions: Circle the number, which you think is the most appropriate answer.

1. What is the difference between a bridge and layer 2 switches? (Choose all that apply)
(a) Switches are software based (b) Bridges are hardware based
(c) Switches are hardware based (d) Bridges are software based
2. In a c/c++ program, the "for loop" is for:
(a) number crunching (b) Repeated calculation
(c) repeated calculation until a given criteria is met
(d) Check end of file
3. The value of the binary number 1101 in decimal system is:
(a) 14 (b) 16 (c) 13 (d) 17
4. Derivative of $\sin x$ is:
(a) $-\cos x$ (b) $\tan x$ (c) $\cos x$ (d) $-\tan x$
5. Jambay saves Nu.2 in January, Nu.6 in February, Nu.18 in March and so on. The total savings in one year is:
(a) Nu.32320 (b) Nu.83490 (c) Nu.531440 (d) Nu.642240
6. Which layer in OSI model is responsible for controlling network communications?
(a) Application layer (b) Data link layer
(c) Physical layer (d) Transport layer
7. The H.C.F of two numbers is 15 and their L.C.M is 180. If one the numbers is 45, the other number is:
(a) 50 (b) 60 (c) 70 (d) 80
8. Dorji has twice as much as Sonam and Sangay has half again as much Tenzin. If their average is Nu.11, then Dorji has:
(a) Nu.5.40 (b) Nu.4.75 (c) Nu.4.40 (d) Nu.4.04
9. In a school, there are fifteen boys at the age of 12 years, sixteen at 15 and eighteen at 14. The average age of the boys is:
(a) 16 yrs (b) 15 yrs (c) 13 yrs (d) 14 yrs (e) None of these
10. is the best conductor of electricity
(a) Copper (b) Silver (c) Gold (d) Brass
11. The value of decimal number 23 in binary is:
(a) 11101 (b) 01101 (c) 10110 (d) 11101
12. The difference between 8 times a number and 3 times the number is 165. Then number is:
(a) 32 (b) 33 (c) 34 (d) 38

13. Attenuation of radio signal is directly proportional to:
 (a) Height (b) distance (c) Atmosphere (d) volume
14. Karma can do a piece of work in 20 days and Kinley can do the same work in 30 days. Karma and Kinley working together can do it in:
 (a) 12 days (b) 15 days (c) 13 days (d) 14 days (e) None of these
15. Which of the following are legal statements?
 (a) float f=1/3;
 (b) int i=1/3;
 (c) float f=1.01;
 (d) double d = 999d;
16. Two persons Dorji and Karma start running a certain distance at 8 and 10 km per hour respectively. Karma reaches the destination 6 minutes earlier. The distance is:
 (a) 7 km (b) 6 km (c) 5 Km (d) 4 km
17. Which of the following techniques is concerned with ultrasonic waves?
 (a) X-ray photography (b) Sonography (c) CATSCAN (d) ECG

Study the table given below and answer the questions 18 through 22

Result	Number of Students			
	Section A	Section B	Section C	Section D
Students failed in both exams	28	23	17	27
Students failed in half-yearly but passed in Annual exams	14	12	8	13
Students passed in half-yearly but failed in Annual exams	6	17	9	15
Students passed in both exams	64	55	46	76

A school has four sections A, B, C, and D of class XII students. The results of half-yearly and annual examinations are shown in the table given above.

18. How many students are there in Class XII in the school?
 (a) 336 (b) 189 (c) 335 (d) 286 (e) 430
19. Which section has the minimum failures rate in half-yearly examination?
 (a) A (b) B (c) C (d) D
 (e) cannot be determined
20. Which section has the maximum success rate in annual examinations?
 (a) A (b) B (c) C (d) D
 (e) cannot be determined
21. Which section has the maximum pass percentage in at least one of the two examinations?
 (a) A (b) B (c) C (d) D
 (e) cannot be determined

22. If the number of students passing an examination be considered a criteria for comparison of difficulty level of two examinations, which of the following statements is true in this context?
- Half-yearly examinations were more difficult
 - Annual examinations were more difficult
 - Both the examinations had almost the same difficulty level
 - The two examinations cannot be compared for difficulty level
 - For students of Section A and B, the annual examinations seem to be more difficult as compared to the half-yearly examinations
23. The angle of elevation of the sun, when the length of the shadow of a tree is $\sqrt{3}$ times the height of the tree is:
- 30 degrees
 - 45 degrees
 - 60 degrees
 - 90 degrees
24. From a point P on a level ground, the angle of elevation of the top of a tower is 30 degrees. If the tower is 100 m high, the distance of point P from the foot of the tower is:
- 149 m
 - 156 m
 - 173 m
 - 200 m
25. What class of IP addresses do IP multicast addresses fall into:
- Class A
 - Class B
 - Class C
 - Class D
 - Class E
26. The computers connected to LAN are called all these EXCEPT:
- Workstation
 - Clients
 - Nodes
 - FTP
27. In a single throw of a die, what is the probability of getting a number greater than 4?
- 1/2
 - 1/3
 - 2/3
 - 3/4
28. In a simultaneous throw of two dice, what is the probability of getting a doublet?
- 1/6
 - 1/4
 - 2/3
 - 3/7
29. How many hosts will a subnet mask of 255.255.255.240 support?
- 2
 - 16
 - 14
 - 30
30. 270 candidates appeared for an examination, of which 252 passed. The percentage is:
- 80%
 - 83.5%
 - $90\frac{1}{3}\%$
 - $93\frac{1}{3}\%$
31. The value of $a - [3b - \{5c - (2a - 2b - 3c)\}]$ equal to, if $a = 4, b = 5, c = 6$.
- 24
 - 23
 - 39
 - 17
 - 21
32. $(A \cap B)'$ is equal to:
- $A \cap B$
 - $A' \cap B$
 - $A \cap B'$
 - $A' \cap B'$
 - None of these
33. A mirror always:
- refracts
 - reveals the truth
 - distorts
 - reflects
 - distracts
34. The diagonals of a parallelogram are perpendicular. This figure is a:
- quadrilateral
 - trapezium
 - hexagon
 - rhombus
 - pentagon

35. This figure is a circle because:
- it is divided into four equal parts
 - it has two right angles
 - it has a large area
 - it has no angles
36. Platinum is costlier than silver because it is:
- Rarely found
 - whiter than silver
 - more in demand
 - Lighter than silver
37. Electricians wear rubber gloves because:
- they keep their hands soft
 - they are bad conductors of electricity
 - they are cheaper than other gloves
 - it is fashionable for them to do so
38. The Selection Board call the candidates for the interview because:
- they want to see the candidate's physical appearance
 - it is then easier to decide which candidate is fit for the job
 - the members of the Selection Board have no other work during office hours
 - none of the above
39. If CHAIR is coded as FKDLU then RAID is coded as:
- ULGD
 - ULKG
 - ULDC
 - UDLG
40. If CONDEMN is coded as CNODMEN, then TEACHER is coded as:
- TEACHER
 - AEECHR
 - TCAEEHR
 - TAECEHR
41. In the question 1 : 11 : 2 : ? Select the option from the following which follows the same relationship as shared between the first two numbers.
- 20
 - 22
 - 24
 - 44
42. Which number will complete the given series?
4, 8, 12, 16, ?
- 18
 - 20
 - 22
 - 24
43. Complete the given series from the given option.
3, 9, 27, 81, 243, ?
- 486
 - 729
 - 972
 - 359
44. $\int \sinh x \, dx = ?$
- $\cosh x$
 - $-\cosh x$
 - $\ln (\cosh x)$
 - $\tanh x$
45. The length of a room is 5.5 m and width is 3.75. Find the cost of paving the floor by slabs at the rate of Nu.800 per sq.meter.
- Nu.15,000
 - Nu.15,500
 - Nu.15,600
 - Nu.16,550
46. When 0.47 is converted into a fraction, the result is :

- (a) 46/90 (b) 46/99 (c) 47/90 (d) 47/99

47. If the price of 6 toys is Nu.264.37, what will be the approximate price of 5 toys?

- (a) Nu.140 (b) Nu.100 (c) Nu.200 (d) Nu.220 (e) Nu.240

48. A cistern 6 m long and 4 m wide contains water up to a depth of 1m 25 cm. The total area of the wet surface is:

- (a) 49 sq.m (b) 50 sq.m (c) 53.5 sq.m (d) 55 sq.m

Find the odd man out in questions 49 through 53

49. 3, 5, 7, 12, 17, 19

- (a) 19 (b) 17 (c) 13 (d) 12

50. 10, 14, 16, 18, 21, 24, 26

- (a) 26 (b) 24 (c) 21 (d) 18

51. 3, 5, 9, 11, 14, 17, 21

- (a) 21 (b) 17 (c) 14 (d) 9

52. 1, 4, 9, 16, 23, 25, 36

- (a) 9 (b) 23 (c) 25 (d)

53. 6, 9, 15, 21, 24, 28, 30

- (a) 28 (b) 21 (c) 24 (d) 30

54. When a body is charged by induction, then the charging body

- (a) becomes neutral (b) does not loose any charge
(c) looses whole of its charge
(d) looses part of its charge

Establish the relationship between the two words questions 55 & 56

55. Mania is to Craze as Phobia is to

- (a) Desires (b) Hobbies (c) Want (d) Fear

56. Stars are to Night as Sun is to

- (a) Noon (b) Dawn (c) Day (d) Light

57. Ice cream is as cold as snow. Ice is not as cold as hail. Flakes is not as cold as ice but colder than Ice cream. What is the coldest?

- (a) Hail (b) Ice cream (c) Flakes (d) Ice

Each question 58 through 60 contains six statements followed by four sets of combination of three. Choose the set in which the statements are logically related

58. a. All young people are happy
b. No young people achieve great ends
c. Some young people are happy

- d. All who achieve great ends are happy
- e. No young people are happy
- f. All young people achieve great ends

A. bde B. dfa C. cbf D. ceb

59. a. Some women are of artistic genius
b. Some men are men of scientific ability
c. Some women of artistic genius are women of scientific ability
d. Some women are women of scientific ability
e. Some men of artistic genius are men of scientific ability
f. Some men are of artistic genius

A. bfe B. bfa C. eac D. fdc

60. a. All plants need air
b. All plants need water
c. All roses are plants
d. All roses are fragrant
e. All roses need air
f. All roses are majestic

A. cea B. afb C. def D. dce

61. The average of all odd numbers up to 100 is:
(a) 49 (b) 49.5 (c) 50 (d) 51

62. The average of a non-zero number and its square is 5 times the number. The number is:
(a) 9 (b) 17 (c) 29 (d) 295

63. The average of 7 consecutive numbers is 20. The largest of these numbers is:
(a) 20 (b) 22 (c) 23 (d) 24

64. The average of five consecutive odd numbers is 61. What is the difference between the highest and lowest numbers?

(a) 2 (b) 5 (c) 8 (d) cannot be determined (e) None of these

65. The sum of three consecutive odd numbers is 38 more than the average of these numbers. What is the first of these numbers?

(a) 13 (b) 17 (c) 19 (d) Data inadequate (e) none of these

66. The ratio 5 : 4 expressed as a percent equals:

(a) 12.5% (b) 40% (c) 80% (d) 125%

67. 3.5 can be expressed in terms of percentage as:

(a) 0.35% (b) 3.5% (c) 35% (d) 350%

68. Half of 1 percent written as a decimal is:

(a) 0.005 (b) 0.05 (c) 0.02 (d) 0.2

69. 88% of 370 + 24% of 210 - ? = 118
(a) 256 (b) 258 (c) 268 (d) 358

70. 860% of 50 + 50% of 860 = ?
(a) 430 (b) 516 (c) 860 (d) 960

Part II

Short answer ICT questions

(Marks 10 x 3)

Answer briefly the following question 1 through 10

1. Is it more important to hire a CIO (Chief Information Officer) who has technical skills or one who can relate to senior management and understand the dynamics of this enterprise?

2. What is the difference between Data mining and computational statistics?

3. Is the impact of the internet underrated?

4. Assume yourself as a project manager for application development in an organization. Explain in brief the steps and processes that you would adopt to deliver the project within time.

5. Explain briefly the functions of (a) File server (b) print server (c) mail server and (d) DNS

6. Write a program in C/C++ to calculate the area of triangle

