

Code No.

L – 4049

**Entrance Examination for Admission to the M.Tech. Degree Courses in
the Teaching Departments, 2021**

CSS

TECHNOLOGY MANAGEMENT

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General Instructions

1. The Question Paper is having two Parts — Part 'A' Objective type (60%) & Part 'B' Descriptive type (40%).
2. Objective type questions which carry 1 mark each are to be (✓) 'tick marked' in the response sheets against the appropriate answers provided.
3. 8 questions are to be answered out of 12 questions carrying 5 marks each in Part 'B'.
4. **Negative marking** : 0.25 marks will be deducted for each wrong answer in Part 'A'.

Time : 2 Hours

Max. Marks : 100

To be filled in by the Candidate									
Register Number	in Figures								
	in words								

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PART – A

(Objective Type)

Choose appropriate answer from the options in the questions. **One mark each.**

(60 × 1 = 60 marks)

1. The binary number 000 10011 is equivalent to the decimal number?

a) 18	b) 19
c) 17	d) none of the above

DO NOT WRITE HERE

-
2. This key that uniquely identifies each record is called
- a) Primary key
 - b) Field Name
 - c) Unique Key
 - d) Key Record
3. Which data structure is mainly used for implementing the recursive algorithm?
- a) Linked list
 - b) Stack
 - c) Binary tree
 - d) Queue
4. A bottom-up parser generates
- a) Left-most derivation in reverse
 - b) Left-most derivation
 - c) Right-most derivation in reverse
 - d) Right — most derivation

5. If the elements '1', '2', '3' and '4' are inserted in a queue, what would be order for the removal?
 - a) 1234
 - b) 4321
 - c) 3241
 - d) None of the above

6. The size of virtual memory is based on which of the following?
 - a) CPU
 - b) RAM
 - c) Address bus
 - d) Data bus

7. The transfer between CPU and Cache is
 - a) Block transfer
 - b) Word transfer
 - c) Set transfer
 - d) Associative transfer

8. If a page number is not found in the translation look a side buffer, then it is known as a?
 - a) Translation Look a side Buffer miss
 - b) Translation Look a side Buffer hit
 - c) Buffer miss
 - d) All of the above

9. Which of the following is not an example of system software?
 - a) Language Translator
 - b) Utility Software
 - c) Communication Software
 - d) Word Processors

10. Solder is an alloy of
 - a) Copper and Aluminium
 - b) Nickal, Copper and Zinc
 - c) Tin and Lead
 - d) Silver, Copper and Lead

11. In a series circuit, which of the parameters remain constant across all circuit elements such as resistor, capacitor and inductor etcetera?
 - a) Voltage
 - b) Current
 - c) Both voltage and current
 - d) Neither voltage nor current

12. If two forces of 3 kg and 4 kg act at right angles to each other, their resultant force will be equal to
 - a) 7 kg
 - b) 1 kg
 - c) 5 kg
 - d) 117 kg

13. If there are two bulbs connected in series and one blows out, what happens to the other bulb?
- a) The other bulb continues to glow with the same brightness
 - b) The other bulb stops glowing
 - c) The other bulb glows with increased brightness
 - d) The other bulb also burns out
14. Which of the following statements are true?
- a) Power is proportional to voltage only
 - b) Power is proportional to current only
 - c) Power is neither proportional to voltage nor to the current
 - d) Power is proportional to both the voltage and current
15. Kilowatt-hour (kWh) is a unit of?
- a) Current
 - b) Power
 - c) Energy
 - d) Resistance
16. Mesh analysis is generally used to determine
- a) Voltage
 - b) Current
 - c) Resistance
 - d) Power
17. For high frequencies, capacitor acts as
- a) Open circuit
 - b) Short circuit
 - c) Amplifier
 - d) Rectifier
18. The conventional direction of electric field is
- a) Positive to negative
 - b) Negative to positive
 - c) No specific direction
 - d) Direction cannot be determined
19. Which, among the following qualities, is not affected by the magnetic field?
- a) Moving charge
 - b) Change in magnetic flux
 - c) Current flowing in a conductor
 - d) Stationary charge
20. Which of the following is done to convert a continuous time signal into discrete time signal?
- a) Modulating
 - b) Sampling
 - c) Differentiating
 - d) Integrating

21. What is the full form of WLAN?
 a) Wide Local Area Network b) Wireless Local Area Network
 c) Wireless Land Access Network d) Wireless Local Area Node
22. What is a cell in cellular system?
 a) A group of cells b) A group of subscribers
 c) A small geographical area d) A large group of mobile systems
23. What is equilibrium in neural systems?
 a) deviation in present state, when small perturbations occur
 b) settlement of network, when small perturbations occur
 c) change in state, when small perturbations occur
 d) none of the mentioned
24. The dual pair of current is?
 a) voltage b) current source
 c) capacitance d) conductance
25. Consider a circuit with two unequal resistances in parallel, then
 a) large current flows in large resistor
 b) current is same in both
 c) potential difference across each is same
 d) smaller resistance has smaller conductance
26. A network contains linear resistors and ideal voltage sources. If values of all the resistors are doubled, then voltage across each resistor is
 a) Halved b) Doubled
 c) Increases by 2 times d) Remains same
27. Cutting and joining of the DNA are which techniques?
 a) DNA degradation b) DNA replication
 c) DNA manipulation d) DNA synthesis
28. Which of the following refers to the inactivation of Insertional inactivation?
 a) Host b) Gene of Interest
 c) Gene of the vector d) Gene of the host
29. Which cells are found in the intestinal lining?
 a) Neurons b) Epithelial cells
 c) Hepatocytes d) RBCs
30. Light energy is converted to chemical energy by photosynthesis and is stored in
 a) Glial cells b) Mitochondria
 c) Proteins d) Carbohydrates

31. In humans, glucose in the body is released by
a) Intestine b) Kidney
c) Liver d) Lungs
32. A body of mass 'm' moving with a constant velocity 'v' strikes another body of same mass moving with same velocity but in opposite direction. The common velocity of both the bodies after collision is
a) 0 v b) 2 v
c) 4 v d) 8 v
33. A rubber ball is dropped from a height of 2 m. If there is no loss of velocity after rebounding, the ball will rise to a height of
a) 1 m b) 2 m
c) 3 m d) 4 m
34. The operation of forcing additional air under pressure into the engine cylinder is known as
a) Supercharging b) Carburetion
c) Turbulence d) Delay period
35. Thermal conductivity of non-metallic amorphous solids with decrease in temperature
a) Increases
b) Decreases
c) Remain constant
d) May increase or decrease depending on temperature
36. The painting of automobiles is done to
a) Prevent rust from growing on the body
b) Improve its external appearance
c) Retain the characteristics of steel for long
d) All of these
37. The most commonly used power plant in automobiles is
a) Gas turbine b) I.C. engine
c) Battery d) None of these
38. The meaning of blue color is (in mechanical engineering)
a) The component is hot b) The component is cold
c) The component is safe d) There is possible danger
39. Modern automobile car is produced by
a) Sequential design b) Design by craft evolution
c) Design synthesis d) Simultaneous design
40. The brake used in railway coaches is
a) Shoe brake b) Block brake
c) Band brake d) Disk brake

41. As compared to belt drive, the chain drive transmits
 a) More power b) Less power
 c) Same power d) None of the above
42. Steels used for welded assemblies are
 a) Medium carbon steel b) Mild steel
 c) High carbon steel d) Alloy steel
43. The roads that connect the district headquarters to important city of other state is called
 a) National Highway b) State Highway
 c) Major district road d) Other district road
44. The property by which a body returns to its original shape after removal of the force is called
 a) Plasticity b) Elasticity
 c) Ductility d) Malleability
45. The unit of force in SI. units is?
 a) Kilogram b) Newton
 c) Watt d) Dyne
46. Hydrology is the science which deals with
 a) rain water b) river water
 c) sea water d) surface and underground water
47. The rocks formed by gradual deposition, are called
 a) Sedimentary rocks b) Igneous rocks
 c) Metamorphic rocks d) None of these.
48. The main factor to be considered while preparing a detailed estimate, is
 a) Quantity of the materials b) Availability of materials
 c) Transportation of materials d) All the above.
49. The fundamental units in S.I. System are:
 a) Centimeter, gram, second b) Foot, pound, second
 c) Meter, kilogram, second d) Kilometer, kilogram, minute
50. Surveys which are carried out to provide a national grid of control for preparation of accurate maps of large areas, are known
 a) Plane surveys b) Geodetic surveys
 c) Geographical surveys d) Topographical surveys.
51. Chemically, marble is known as
 a) Metamorphic rock b) Argillaceous rock
 c) Calcareous rock d) Silicious rock.

52. For one cubic meter of brick masonry, number of bricks required is
- a) 400
 - b) 425
 - c) 450
 - d) 500
53. WWW was invented by
- a) Bill gates
 - b) Tim Berners Lee
 - c) Larry Page
 - d) Ted Nelson
54. In TCP, sending and receiving data is done as
- a) Stream of bytes
 - b) Sequence of characters
 - c) Lines of data
 - d) Packets
55. Dynamic web page
- a) is same every time whenever it displays
 - b) generates on demand by a program or a request from browser
 - c) both is same every time whenever it displays and generates on demand by a program or a request from browser
 - d) is different always in a predefined order
56. Cookies were originally designed for
- a) Client side programming
 - b) Server side programming
 - c) Both Client side programming and Server side programming
 - d) Socket programming
57. HTTP is _____ protocol.
- a) application layer
 - b) transport layer
 - c) network layer
 - d) data link layer
58. In asymmetric key cryptography, the private key is kept by
- a) sender
 - b) receiver
 - c) sender and receiver
 - d) all the connected devices to the network
59. Network layer firewall works as a
- a) Frame filter
 - b) Packet filter
 - c) Content filter
 - d) Virus filter
60. PPP provides the _____ layer in the TCP/IP suite.
- a) Link
 - b) Network
 - c) Transport
 - d) Application

ANSWER SHEET — PART — A

1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
13	A	B	C	D	E
14	A	B	C	D	E
15	A	B	C	D	E
16	A	B	C	D	E
17	A	B	C	D	E
18	A	B	C	D	E
19	A	B	C	D	E
20	A	B	C	D	E

21	A	B	C	D	E
22	A	B	C	D	E
23	A	B	C	D	E
24	A	B	C	D	E
25	A	B	C	D	E
26	A	B	C	D	E
27	A	B	C	D	E
28	A	B	C	D	E
29	A	B	C	D	E
30	A	B	C	D	E
31	A	B	C	D	E
32	A	B	C	D	E
33	A	B	C	D	E
34	A	B	C	D	E
35	A	B	C	D	E
36	A	B	C	D	E
37	A	B	C	D	E
38	A	B	C	D	E
39	A	B	C	D	E
40	A	B	C	D	E

41	A	B	C	D	E
42	A	B	C	D	E
43	A	B	C	D	E
44	A	B	C	D	E
45	A	B	C	D	E
46	A	B	C	D	E
47	A	B	C	D	E
48	A	B	C	D	E
49	A	B	C	D	E
50	A	B	C	D	E
51	A	B	C	D	E
52	A	B	C	D	E
53	A	B	C	D	E
54	A	B	C	D	E
55	A	B	C	D	E
56	A	B	C	D	E
57	A	B	C	D	E
58	A	B	C	D	E
59	A	B	C	D	E
60	A	B	C	D	E

TECHNOLOGY MANAGEMENT

PART – B

(Management Aptitude)

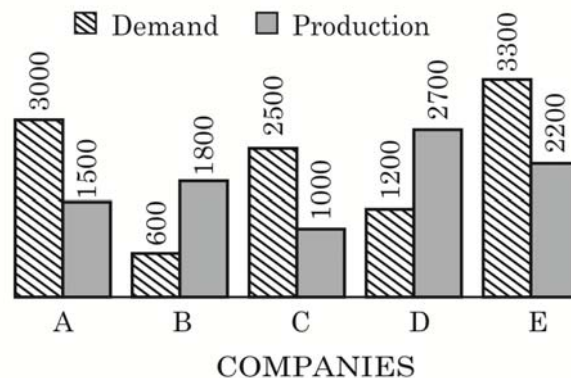
Answer any **eight** questions out of **twelve** questions. Each question is based on the information given and five sub questions based on it. Each sub questions carry **one** mark. **(8 × 5 = 40 Marks)**

- I. Directions (Q.1-5) These questions are based on the following data for an examination.

Candidates appeared	10,500
Passed in all the five subjects	5,685
Passed in three subjects only	1,498
Passed in two subjects only	1,250
Passed in one subject only	835
Failed in English only	78
Failed in Maths only	275
Failed in Physics only	149
Failed in Chemistry only	147
Failed in Biology only	221

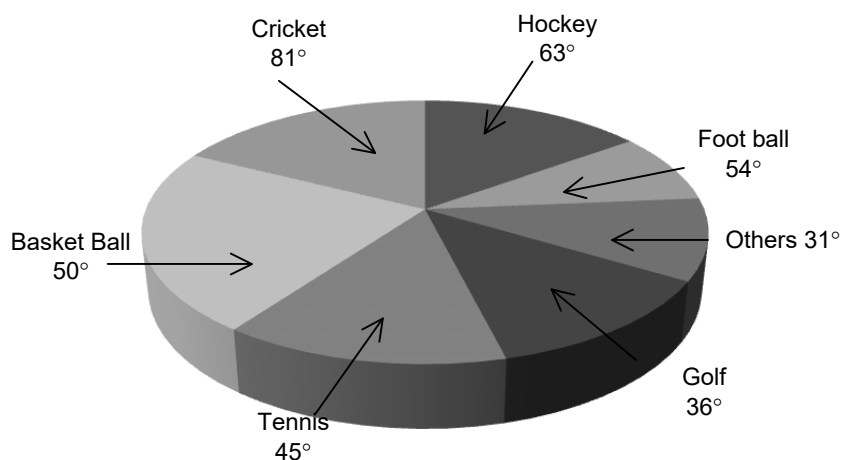
- (1) How many candidates failed in all the subjects?
- (2) How many candidates failed because of having failed in four or less subjects?
- (3) How many candidates passed at least in four subjects?
- (4) If 167 candidates passed in English only and 2557 failed in English. How many candidates failed even after having passed in English and one or more other subjects?
- (5) If 1002 candidates failed in Mathematics, how many candidates failed because of having failed in Maths but not in Maths only?

II. Instructions (Q.1-5)-Study the following graph carefully and answer the questions given below it.



- (1) What is the ratio of companies having more demand than production to those having more production than demand?
- (2) What is the difference between average demand and average production of the five companies taken together?
- (3) The production of company D is how many times that of production of the company A?
- (4) The demand for company B is approximately what percent of the demand for company C?
- (5) If company A desires to meet the demand by purchasing T.V. sets from a single company, which one of the companies can meet the need adequately among Company B, C and D?

III. The circle-graph given here shows the spendings of a country on various sports during a particular year. Study the graph carefully and answer the questions given below it.



- (1) What percent of total spending is spent on Tennis?
- (2) How much percent more is spent on Hockey than that on Golf?
- (3) If the total amount spent on sports during the year be Rs. 1,80,00,000 the amount spent on Basketball exceeds on Tennis by:
- (4) How much percent less is spent on Football than that on Cricket?
- (5) If the total amount spent on sports during the year was Rs. 2 crores, the amount spent on Cricket and Hockey together was:

IV. Instructions (Q. 1-5)-Study the following table carefully and answer the questions given below it. Number of students appeared and passed in the annual examination of a school from five classes.

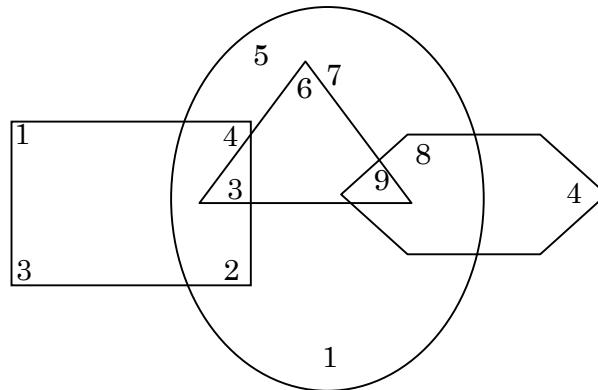
Year	VI		VII		VIII		IX		X	
	A	P	A	P	A	P	A	P	A	P
2002	78	65	72	64	92	80	64	54	65	61
2003	67	42	66	52	78	72	56	51	60	56
2004	88	81	64	50	68	63	74	63	74	70
2005	92	79	53	38	55	41	69	66	80	72
2006	60	54	58	44	58	45	88	78	88	76
2007	64	56	48	40	46	38	52	40	90	88
2008	78	54	80	76	76	68	66	62	68	56

A = Appeared

P = Passed

- (1) What is the ratio of the total number of passed students to the total number of students not passed from the year 2007?
- (2) What is the average number of candidates not passed from class VII over the given years?
- (3) Which class has maximum percent of pass students over the years?
- (4) Percentage of candidates passed over appeared from class IX is the highest during which of the years?
- (5) What is the total number of candidates passed from all the classes together in the year 2005?

V. Study the figure given below carefully and answer the questions that follow:



- (1) Whether any number belongs to all the figures?
- (2) What is the sum of the numbers which belong to two figure only?
- (3) What is the product of the numbers which belong to three figures only?
- (4) What is the sum of the numbers which belong to one figure only?
- (5) What is the product of the numbers which belong to two figures only?

VI. Each of these questions are based on the information given below:

- A ,B, C, D and E are five men sitting in a line facing to south - while M, N, O, P and Q are five ladies sitting in a second line parallel to the first line and are facing to North.
 - B who is just next to the left of D, is opposite to Q.
 - C and N are diagonally opposite to each other.
 - E is opposite to O who is just next right of M.
 - P who is just to the left of Q, is opposite to D.
 - M is at one end of the line.
- (1) Who is sitting third to the right of O?
 - (2) If B shifts to the place of E, E shifts to the place of Q, and Q shifts to the place of B, then who will be the second to the left of the person opposite to O?
 - (3) Who is the pair is diagonally opposite to A?
 - (4) If O and P, A and E and B and Q interchange their positions, then who will be the second person to the right of the person who is opposite to the person second of the right of P?
 - (5) In the original arrangement who is sitting just opposite to N?

VII. Directions to Solve

In each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and Give answer

- (A) If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question
- (B) If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question
- (C) If the data either in statement I alone or in statement II alone are sufficient to answer the question
- (D) If the data given in both statements I and II together are not sufficient to answer the question and
- (E) If the data in both statements I and II together are necessary to answer the question.

(1) Question: In which year was Rahul born?

Statements:

I Rahul at present is 25 years younger to his mother.

II Rahul's brother, who was born in 1964, is 35 years younger to his mother.

(2) Question: What will be the total weight of 10 poles, each of the same weight?

Statements:

I One-fourth of the weight of each pole is 5kg.

II The total weight of three poles is 20 kilograms more than the total weight of two poles.

(3) Question: How many children does M have?

Statements:

I H is the only daughter of X who is wife of M.

II K and J are brothers of M.

(4) Question: How much was the total sale of the company?

Statements:

I The company sold 8000 units of product A each costing Rs. 25.

II This company has no other product line.

(5) Question: The last Sunday of March, 2006 fell on which date?

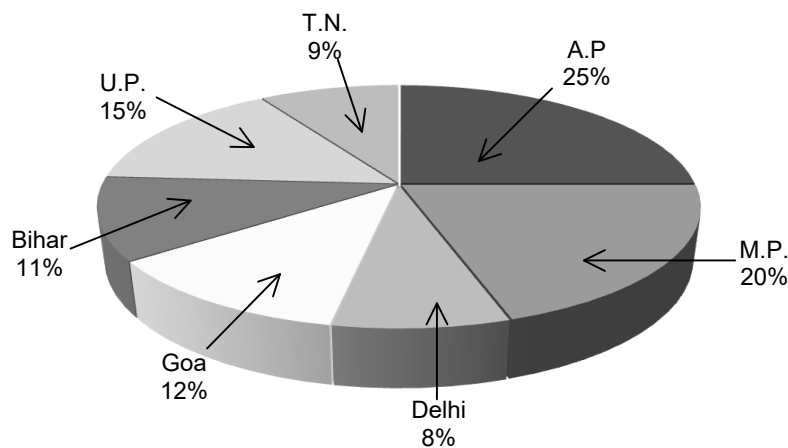
Statements:

I The first Sunday of that month fell on 5th.

II The last day of that month was Friday.

VIII. Study the following graph and the table and answer the questions given below.

Data of different states regarding population of states in the year 2020



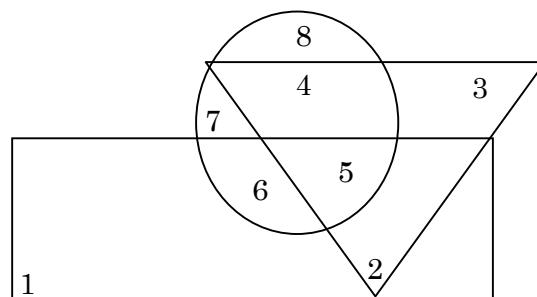
Total population of the given States = 32,76,000

Sex and Literacy wise population Ratio

States	Sex		Literary	
	M	F	Literate	Illiterate
A.P.	5	3	2	7
M.P	3	1	1	4
Delhi	2	3	2	1
Goa	3	5	3	2
Bihar	3	4	4	1
U.P.	3	2	7	2
T.N.	3	4	9	4

- (1) What will be the percentage of total number of males in U.P, M.P. and Goa together to the total population of all the given states?
- (2) What was the total number of illiterate people in A.P. and M.P. in 1998?
- (3) What is the ratio of the number of females in T.N. to the number of females in Delhi?
- (4) What was the number of males in U.P. in the year 1998?
- (5) If in the year 1998, there was an increase of 10% in the population of U.P. and 12% in the population of M.P. compared to the previous year, then what was the ratio of population of U.P. and M.P. in 1997?

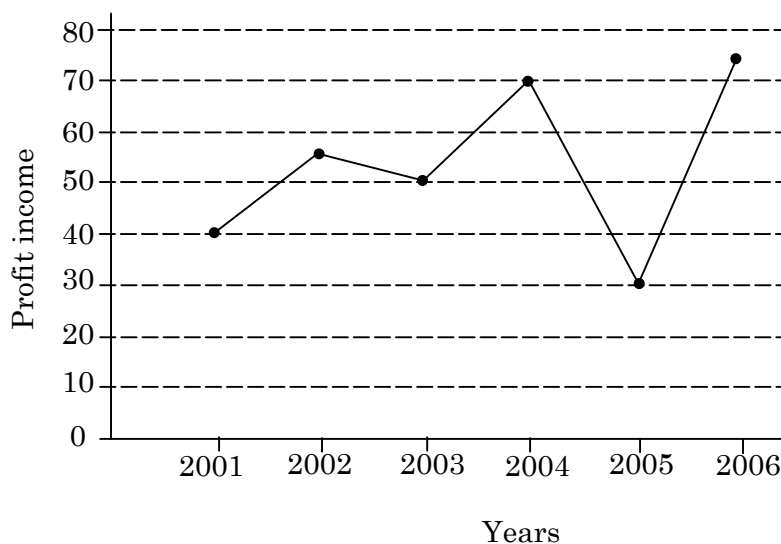
IX. Directions (Q. 1–5): In the following questions, answers are to be based on the numbers in the diagrams given below, where the triangle represents doctors, the circle represents players and the rectangle represents artists.



- (1) Which numbered space in the diagram represents doctors who are also players and artists?
- (2) Which number represents artists who are also players only?
- (3) Which number represents artists who are neither players nor doctors?
- (4) Which number represents doctors who are neither players nor artists?
- (5) Which numbers represent players who are neither artists nor doctors?

X. Study the graph given below carefully and answer the questions that follow:

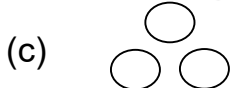
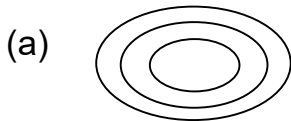
Profit earned by company A over the years



- (1) What is the percent profit of the company in the year 2004, if the income of the company was Rs 120 crore?
- (2) The expenditure of the company in the year 2005 was Rs. 85 crores. What is the ratio of income to the expenditure of the company in that year?
- (3) What is the approximate average (in crores) profit made by the company over the years?
- (4) The income of the company in the year 2001 was Rs. 95 crores. What was the expenditure of the company in that year?
- (5) What is the percent increase in the profit of the company in the year 2004 from the previous year?

- XI. 8 kids (including 4 boys and 4 girls) are sitting in a circle
- (i) 4 girls are G1, G2, G3, G4 and 4 boys are B1, B2, B3, B4.
 - (ii) No 2 girls or 2 boys are sitting adjacent to each other.
 - (iii) G3 who is sitting between B3 and B1 is facing G4.
 - (iv) B4 is sitting between G4 and G1 and is facing B3.
 - (v) B2 is to the left of G2.
- (1) Who is sitting to the right of B1?
 - (2) Who are the immediate neighbours of G4?
 - (3) Who is sitting to the left of G4?
 - (4) Who is facing G1?
 - (5) Who are the immediate neighbours of B1?

XII. Directions (Q. 1–5): Each of these questions below contains three groups of things. You are to choose from the following five diagrams, the one that depicts the correct relationship among the three groups of things in each question.



- (1) Carrot, Food, Vegetables
- (2) Tie, Shirt, Pantaloon
- (3) Shirt, Collar, Pocket
- (4) Planet, Earth, Sun
- (5) Truck, Ship, Goods

