**Directions for questions 1 to 4:** Answer the questions on the basis of the information given below.

A famous detective, Byomkesh, was solving a problem when he accidently spilled water on the sheet of paper. Byomkesh challenged Ajit to solve the calculation by replacing the digits. Here is the calculation:

(i)
$$\begin{array}{r} ABCD \\ \times \quad E \\ \hline =FCDIE \end{array}$$

(ii)
$$\begin{array}{r} JEAG \\ \times \quad C \\ \hline =BBFHH \end{array}$$

Here, all the letters (A to J) represent distinct single digit non-negative integers from 0 to 9. It is also known that C and D are even natural numbers and I is an odd natural number.

**Q 1.** What is the value of A?

**Q 2.** What is the value of H?

**Q 3.** If Ajit replaces one of the letters representing an even natural number in equation (i) with an odd natural number, then the value of the result/ product increases by 60. Which number did Ajit replace?

**Q 4.** By replacing one of the digits, from J, E, A, and G, to 1 in equation (ii), the final product changes to a number that has four even digits, with the solitary one odd digit as its leading digit (at the ten thousand's place). Which of the following digits have been changed? The multiplier C has not been changed.

**1)** J

**2)** E

**3)** A

**4)** G

**Directions for questions 5 to 10:** Answer the questions on the basis of the information given below.

Seven friends - Arun, Bishwas, Chetan, Deepak, Eshan, Faiz and Gopal are subscribers to one of the Cellular Networks - Airtel, Jio, Voda and BSNL.
All members of every family subscribe to the network. Every Network has atleast one customer from among these 7 friends.
All the 7 friends are on a trip to Dubai on a short visit. Every one of made a call to their own families, and in addition atleast two calls to the families of their friends, who were accompanying them on the trip. The roaming charges per call of the 4 networks are : Airtel ($3) ; Jio ($4) ; Voda ($5) and BSNL ($6).
If a subscriber is calling from Network X and the receiver is from Network Y, the charges for the call is equal to Minimum of (Roaming Charges of Network X, Roaming Charges of Network Y).
If they are both from the same network, the charges for the call is equal to the roaming charges of that network.
The additional information are as below:
(i) The total call charges for two friends were $9 and $12. The friend(s) on Jio network called the family members of at least one friend, who was on the Airtel Network.
(ii) Faiz and Gopal talked to the family members of all friends and the average call charges between them was $30. The call charges for Faiz was more than that for Gopal, who is on the Voda network.
(iii) Deepak, who is on the BSNL network spend $16 on the call charges.
(iv) Arun called all the families who were receivers of calls from a friend who is a BSNL subscriber. All the families who received calls from Eshan belonged to different networks.
(v) No family received more than five calls. The family members of Bishwas and Chetan received 4 calls. Chetan had not called Eshan's family.
(vi) The total call charges of Deepak, Eshan and Bishwas were consecutive numbers in the decreasing order.
(vii) Family members of any friend can receive a call from atmost one Airtel subscriber.
(viii) Family members of two friends on the same network must be contacted by different number of friends.

**Q 5.** The family members who were on the Voda network received calls from

**1)** Arun, Bishwas, Eshan, Faiz and Gopal

**2)** Arun, Bishwas, Faiz and Gopal

**3)** Chetan, Eshan, Faiz and Gopal

**4)** Bishwas, Chetan, Eshan, Faiz and Gopal

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**Q 6.** Family members of Faiz did not receive calls from

**1)** Bishwas and Eshan

**2)** Bishwas and Chetan

**3)** Bishwas, Chetan and Eshan

**4)** Chetan and Eshan

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**Q 7.** The total call charges (in $) of Arun was

**1)** 9

**2)** 12

**3)** 14

**4)** 15

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**Q 8.** How many friend(s) had not made any call a receiver on the Airtel Network?

**1)** 1

**2)** 2

**3)** 3

**4)** Either (1) or (2)

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**Q 9.** Which of the following is true about Eshan's calls?

**1)** He called Deepak's family.

**2)** He called either Deepak's family or Faiz's family.

**3)** He called Chetan's family.

**4)** He called either Chetan's family or Faiz's family.

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**Q 10.** Who had made the minimum number of calls?

**1)** Arun

**2)** Chetan

**3)** Arun and Chetan

**4)** Chetan and Deepak

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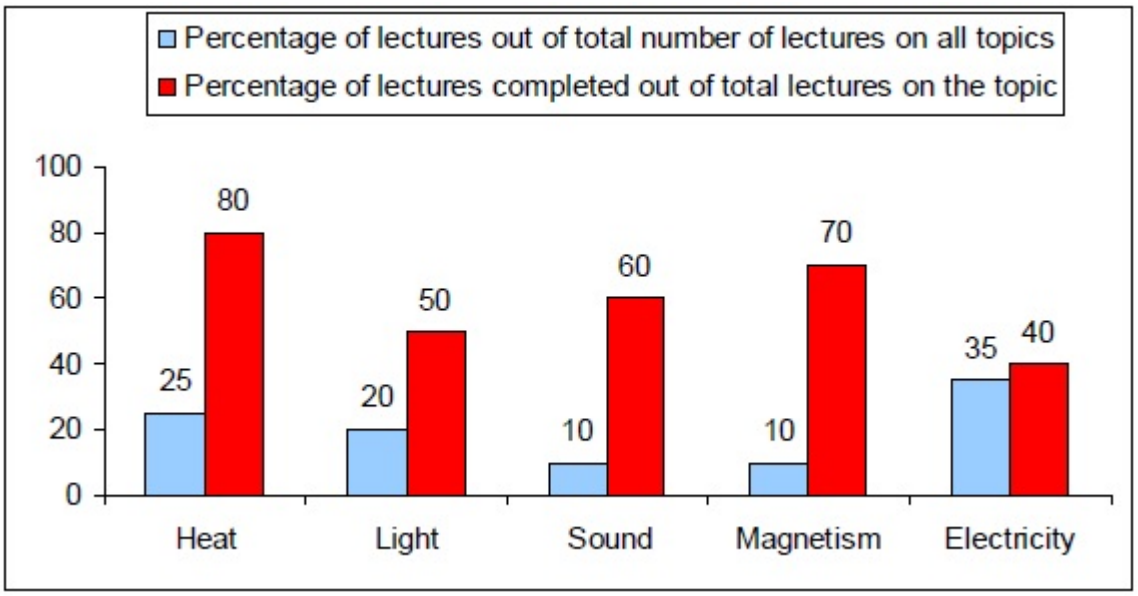
**Directions for questions 11 to 15:** Answer the questions on the basis of the information given below.

Tyagi is a student, who has enrolled in an online Physics course that has a series of lectures on five different topics - Heat, Light, Sound, Magnetism and Electricity. The lectures are recorded videos and the total number of lectures on each topic may or may not be equal but the duration of each lecture is 30 minutes. A student is free to pause a lecture in between and view it later on.
The bar graph given below shows the percentage distribution of the number of lectures on each topic out of the total number of lectures and the percentage of lectures out of the total lectures on each topic that Tyagi has finished viewing.




Further, it is also known that:
(i) The total number of lectures already viewed by Tyagi are 114.
(ii) The time spent by Tyagi each day on viewing the lectures on Heat, Light, Sound, Magnetism and Electricity are 50, 45, 35, 40 and 30 minutes respectively.

(iii) Lectures on each topic are ordered from 1, 2, 3, …, to n.
(iv) Tyagi views the lectures of each topic in order (from 1st to last), that is he watches the (n + 1)th lecture only after completing the nth lecture.

**Q 11.** Find the number of days required by Tyagi to complete all the remaining lectures on Heat.

**1)** 5

**2)** 6

**3)** 8

**4)** 7.5

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**Q 12.** Which lecture of Light is Tyagi watching at the end of Day 5?

**1)** Lecture 9

**2)** Lecture 7

**3)** Lecture 6

**4)** Lecture 8

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**Q 13.** If the time spent by Tyagi each day on viewing lectures of Electricity was the same as that spent on lectures of Sound, then how many days earlier than the scheduled time would Tyagi complete the topic of Electricity?

**1)** 8

**2)** 9

**3)** 10

**4)** 11

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**Q 14.** Find the percentage out of the total number of lectures on Magnetism that are remaining to be viewed by Tyagi after Day 9?

**1)** 40%

**2)** 25%

**3)** 20%

**4)** 30%

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**Q 15.** What is the total number of lectures that Tyagi has finished (completed) viewing at the end of Day 4?

**1)** 24

**2)** 25

**3)** 28

**4)** 30

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**Directions for questions 16 to 20:** Answer the questions on the basis of the information given below.

A Ticketing Program is needed to allow a Wildlife Park to sell tickets. A booking consists of one or more tickets for the same day(s) and can be made up to a week in advance. A booking can be made for a visit of one day or two consecutive days. A booking will be valid for the day(s) chosen only. If you wish to change from one ticket type to another ticket type there is a $4 charge imposed as penalty. The

additional payments (if any) due to pricing change of the new ticket type will have to be borne by the customer.

| Ticket Type | Cost for 1 day | Cost for 2 days |
|---|---|---|
| One Adult | $20 | $30 |
| One Child | $12 | $18 |
| One Senior | $16 | $24 |
| Family Ticket (Allowed upto 2 Adults/Seniors, and 3 Children) | $60 | $90 |
| Group of 6 (price per person) | $15 | $22.50 |

**Q 16.** Raju's family of 10 (2 Seniors, 4 Adults, 4 Children) plan to visit the Wildlife Park. What is the best deal (in $) for 2 days that Raju can get?

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**Directions for questions 16 to 20:** Answer the questions on the basis of the information given below.

A ticketing program is needed to allow a Wildlife Park to sell tickets. A booking consists of one or more tickets for the same day(s) and can be made up to a week in advance. A booking can be made for a visit of one day or two consecutive days. A booking will be valid for the day(s) chosen only. If you wish to change from one ticket type to another ticket type there is a $4 charge imposed as penalty. The additional payments (if any) due to pricing change of the new ticket type will have to be borne by the customer.

| Ticket Type | Cost for 1 day | Cost for 2 days |
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| One Adult | $20 | $30 |
| One Child | $12 | $18 |
| One Senior | $16 | $24 |
| Family Ticket (Allowed upto 2 Adults/Seniors, and 3 Children) | $60 | $90 |
| Group of 6 (price per person) | $15 | $22.50 |

**Q 17.** If the best deal of visiting the Wildlife Part for one day was $ 120 for a group of 10, find the maximum number of Children in the group, if at least one among them is not a child?

**1)** 5

**2)** 6

**3)** 7

**4)** 8

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**Q 18.** Ravi's family of 4 (2 Adults and 2 Children) booked a ticket for one day. However, his brother's family of 3 (2 Adults and 1 Child) and his Parents (2 Seniors) also wanted to tag along. What is the most optimum cost (in $) at which the trip can now be made? (inclusive of any changes of made in the ticket type)

**1)** 126

**2)** 130

**3)** 158

**4)** 172

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**Q 19.** A group of N people (including Seniors, Adults, and atmost 3 Children) found that the best ticket for a one day visit was to buy One Group of 6 and One Family Ticket, because of which they saved $34 compared to buying individual tickets. What is the number of Adults in this group?

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**Directions for questions 16 to 20:** Answer the questions on the basis of the information given below.

A program is needed to allow a Wildlife Park to sell tickets. A booking consists of one or more tickets for the same day(s) and can be made up to a week in advance. A booking can be made for a visit of one day or two consecutive days. A booking will be valid for the day(s) chosen only. If you wish to change from one ticket type to another ticket type there is a $4 charge imposed as penalty. The additional payments (if any) due to pricing change of the new ticket type will have to be borne by the customer.

| Ticket Type | Cost for 1 day | Cost for 2 days |
|---|---|---|
| One Adult | $20 | $30 |
| One Child | $12 | $18 |
| One Senior | $16 | $24 |
| Family Ticket (Allowed upto 2 Adults/Seniors, and 3 Children) | $60 | $90 |
| Group of 6 (price per person) | $15 | $22.50 |

**Q 20.** Raju's family of 8 (2 Adults, 4 Seniors, 2 Children) had planned for a 2 day trip. But due to some emergency, Raju and his Father (One Adult, One Senior) had to get back to their hometown at the end of day one. So they bought the tickets accordingly. The rest of the family enjoyed their day two in the park. What is the best deal cost (in $) for the trip?

**1)** 159

**2)** 204

**3)** 212

**4)** 216

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