|               | Α            | В              | С                                                                                                                                                                             | D            | Е               | F           | G          | Н               | I           | J            | K            | L |
|---------------|--------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|-------------|------------|-----------------|-------------|--------------|--------------|---|
| 1             | Income dis   | tribution of   | f 1000 fami                                                                                                                                                                   | lies follows | Normal distrib  | oution with | Mean 4000  | 00 and S.D. 100 | 000. From t | his group or | ne family is |   |
| 2             | selected at  | random, co     | mpute the                                                                                                                                                                     | probability  | that income of  | this family | lies.      |                 |             |              |              |   |
| 3             |              | i) below 45    | 5000 ii) mo                                                                                                                                                                   | re than 420  | 00 iii) between | 45000 to 5  | 50000      |                 |             |              |              |   |
| 4             | Also estim   | ate the num    | ber of fami                                                                                                                                                                   | lies whose   | income lies     |             |            |                 |             |              |              |   |
| 5             |              | i) atleast 40  | 6000 ii) atn                                                                                                                                                                  | nost 50000   | iii) between 35 | 000 to 500  | 00         |                 |             |              |              |   |
| 6             |              |                |                                                                                                                                                                               |              |                 |             |            |                 |             |              |              |   |
| 7             | Solution:-   | Let, x=Inco    | me                                                                                                                                                                            |              |                 |             |            |                 |             |              |              |   |
|               | Here, we h   |                |                                                                                                                                                                               | ~~/          | 1000            |             | 10000      |                 |             |              |              |   |
| 9             |              | Mean(μ)=       | 40000                                                                                                                                                                         | S.D(σ)=      | 10000           | N=          | 10000      |                 |             |              |              |   |
| _             | First Part   |                |                                                                                                                                                                               |              |                 |             |            |                 |             |              |              |   |
|               |              | p = p(x < 450) |                                                                                                                                                                               |              |                 |             | ST(45000,0 |                 |             |              |              |   |
|               |              | b. = $p(x>42$  |                                                                                                                                                                               |              | 0.42074029      |             | DIST(42000 |                 |             |              |              |   |
|               | iii) Req.pro | ob = p(4500)   | 0 <x<50000< td=""><td>))</td><td>0.14988228</td><td>NORM.DI</td><td>ST(50000,0</td><td>C9,E9,1)-NOR</td><td>M.DIST(45</td><td>5000,C9,E9</td><td>,1)</td><td></td></x<50000<> | ))           | 0.14988228      | NORM.DI     | ST(50000,0 | C9,E9,1)-NOR    | M.DIST(45   | 5000,C9,E9   | ,1)          |   |
| 14            |              |                |                                                                                                                                                                               |              |                 |             |            |                 |             |              |              |   |
| $\overline{}$ | Second Pa    |                |                                                                                                                                                                               |              | 27.42           |             |            |                 |             |              |              |   |
| -             |              | 0. = N*p(x>    |                                                                                                                                                                               |              | 2743            |             |            | 46000,C9,E9,1   | ))          |              |              |   |
|               |              | b. = N*p(x<    |                                                                                                                                                                               |              | 8413            |             |            | 000,C9,E9,1)    |             |              |              |   |
|               | iii) Req.pro | ob. = $N*p(3)$ | 5000 <x<50< td=""><td>0000)</td><td>5328</td><td>G9*(NOR</td><td>M.DIST(50</td><td>000,C9,E9,1)-</td><td>NORM.DI</td><td>ST(35000,C</td><td>(9,E9,1))</td><td></td></x<50<>   | 0000)        | 5328            | G9*(NOR     | M.DIST(50  | 000,C9,E9,1)-   | NORM.DI     | ST(35000,C   | (9,E9,1))    |   |
| 19            |              |                |                                                                                                                                                                               |              |                 |             |            |                 |             |              |              |   |
| 20            |              |                |                                                                                                                                                                               |              |                 |             |            |                 |             |              |              |   |
| 21            |              |                |                                                                                                                                                                               |              |                 | Name        | Karina Kc  |                 |             |              |              |   |
| 22            |              |                |                                                                                                                                                                               |              |                 | Roll NO:    | 15         |                 |             |              |              |   |

|    | А           | В            | С            | D        | Е          | F          | G         | Н        | I      |
|----|-------------|--------------|--------------|----------|------------|------------|-----------|----------|--------|
| 1  | fit Poisson | distribution | n to followi | ng data. |            |            |           |          |        |
| 2  | No. of Acc  | eidents:-    | 0            | 1        | 2          | 3          | 4         | 5        | 6      |
| 3  | Noo. Of D   | ays:-        | 195          | 91       | 40         | 20         | 10        | 3        | 1      |
| 4  |             |              |              |          |            |            |           |          |        |
| 5  | Table for e | expected fre |              |          |            |            |           |          |        |
| 6  | X           | f            | f*x          | Е        |            |            |           |          |        |
| 7  | 0           | 195          | 0            | 160      | Here, mean | n(μ)=      | 0.811     | C14/B14  |        |
| 8  | 1           | 91           | 91           | 130      |            | N=         | 360       |          |        |
| 9  | 2           | 40           | 80           | 53       |            | E=         | G\$9*POIS | SON(A8,G | \$8,0) |
| 10 | 3           | 20           | 60           | 14       |            |            |           |          |        |
| 11 | 4           | 10           | 40           | 3        |            |            |           |          |        |
| 12 | 5           | 3            | 15           | 0        |            |            |           |          |        |
| 13 | 6           | 1            | 6            | 0        |            |            |           |          |        |
| 14 |             | 360          | 292          | 360      |            |            |           |          |        |
| 15 |             |              |              |          |            |            |           |          |        |
| 16 |             |              |              |          |            | Name: Kai  | rina kc   |          |        |
| 17 |             |              |              |          |            | Roll No: 1 | 5         |          |        |

|    | Α            | В             | С             | D        | E            | F           | G           | Н       |
|----|--------------|---------------|---------------|----------|--------------|-------------|-------------|---------|
| 1  | Fit binomia  | al distrituti | on to given   | data.    |              |             |             |         |
| 2  | No. of girls | :-            | 0             | 1        | 2            | 3           | 4           |         |
| 3  | No. of fam   | ilies:-       | 20            | 112      | 244          | 115         | 21          |         |
| 4  |              |               |               |          |              |             |             |         |
| 5  | Solution:-   | Let x= Nun    | nber of girls | 5        |              |             |             |         |
| 6  | Here,we ha   | ave           |               |          |              |             |             |         |
| 7  |              | n=            | 4             | p=       | 0.5          | N=          | 512         |         |
| 8  | Calculation  | table of e    | xpected fre   | quencies |              |             |             |         |
| 9  |              | x=r           | x=r           | x=r      | x=r          |             |             |         |
| 10 |              | 0             | 20            | 0.0625   | 32           | Where,O=    | observed fr | equency |
| 11 |              | 1             | 112           | 0.25     | 128          | E=Expecte   | d frequency | /       |
| 12 |              | 2             | 244           | 0.375    | 192          |             |             |         |
| 13 |              | 3             | 115           | 0.25     | 128          |             |             |         |
| 14 |              | 4             | 21            | 0.0625   | 32           |             |             |         |
| 15 |              |               | 512           | 1        | 512          |             |             |         |
| 16 |              |               | P(x=r)=       | BINOMDIS | T(B10,C\$7,I | E\$7,0)     |             |         |
| 17 |              |               | E=            | G\$7*D11 |              |             |             |         |
| 18 |              |               |               |          |              |             |             |         |
| 19 |              |               |               |          |              | Name= Kai   | rina Kc     |         |
| 20 |              |               |               |          |              | Roll NO: 15 | 5           |         |

|          | Α         | В              | С            | D             | Е               | F              | G         | Н  | ı  |
|----------|-----------|----------------|--------------|---------------|-----------------|----------------|-----------|----|----|
| 1        |           |                |              |               | ntral moments.  |                |           |    |    |
| 2        | of centra | al tendency, N | Measures     | of dispersion | on, skewness an | d kurtosis and | intrepret |    |    |
| 3        | the resu  |                |              |               |                 |                |           |    |    |
| 4        | 45        | 50             | 60           | 70            | 75              | 50             | 80        | 85 | 70 |
| 5        |           |                |              |               |                 |                |           |    |    |
| 6        | Solution  | :- Calculation | n of first i | four central  | moments         |                |           |    |    |
| 7        | X         | (x-x*)         | $(x-x^*)2$   | $(x-x^*)3$    | $(x-x^*)4$      |                |           |    |    |
| 8        | 45        | -19.5          | 380.25       | -7414.875     | 144590.0625     |                |           |    |    |
| 9        | 50        | -14.5          | 210.25       | -3048.625     | 44205.0625      |                |           |    |    |
| 10       | 60        | -4.5           | 20.25        | -91.125       | 410.0625        |                |           |    |    |
| 11       | 70        | 5.5            | 30.25        | 166.375       | 915.0625        |                |           |    |    |
| 12       | 75        | 10.5           | 110.25       | 1157.625      | 12155.0625      |                |           |    |    |
| 13       | 50        | -14.5          | 210.25       | -3048.625     | 44205.0625      |                |           |    |    |
| 14       | 80        | 15.5           | 240.25       | 3723.875      | 57720.0625      |                |           |    |    |
| 15       | 85        | 20.5           | 420.25       | 8615.125      | 176610.0625     |                |           |    |    |
| 16       | 70        | 5.5            | 30.25        | 166.375       | 915.0625        |                |           |    |    |
| 17       | 60        | -4.5           | 20.25        | -91.125       | 410.0625        |                |           |    |    |
| 18       |           | 0              | 1672.5       | 135           | 482135.625      |                |           |    |    |
|          | M         | CA 5           |              | 10            |                 |                |           |    |    |
|          | Mean =    | 64.5           | n =          | 10            |                 |                |           |    |    |
|          |           | t four central | 1            |               | _               |                |           |    |    |
| 21       | For       | Value          | Formula      |               | For             | Value          | Formula   |    |    |
| 22       | m1 =      | 0              | 0            |               | Mean =          | 64.5           | 64.5      |    |    |
| 23       | m2 =      | 167.25         | 167.25       |               | <b>S.D.</b> =   | 12.93251716    | 12.933    |    |    |
| 24       | m3 =      | 13.5           | 13.5         |               | β1 =            | 0.00004        | 4E-05     |    |    |
| 25       | m4 =      | 48213.5625     | 48214        |               | <b>b</b> 2 =    | 1.723601922    | 1.7236    |    |    |
| 26       |           |                |              |               |                 |                |           |    |    |
| 27       |           |                |              |               | N 16 16         |                |           |    |    |
| 28<br>29 |           |                |              |               | Name: Karina Kc |                |           |    |    |
| 30       |           | <u> </u>       |              |               |                 |                |           |    |    |
| 50       |           |                |              |               |                 |                |           |    |    |

|    | Α           | В                                            | С           | D        | E         | F        | G        | Н         | I        | J       | K |
|----|-------------|----------------------------------------------|-------------|----------|-----------|----------|----------|-----------|----------|---------|---|
| 1  | Fit Poisson | distributio                                  | n to follow | ng data. |           |          |          |           |          |         |   |
| 2  | No. of Def  | ects                                         | 0           | 1        | 2         | 3        | 4        | 5         |          |         |   |
| 3  | No. of page | es                                           | 135         | 109      | 40        | 12       | 3        | 1         |          |         |   |
| 4  |             |                                              |             |          |           |          |          |           |          |         |   |
| 5  | Solution:-  |                                              |             |          |           |          |          |           |          |         |   |
| 6  |             | Table for expected frequencie $x = f^*x = E$ |             |          |           |          |          |           |          |         |   |
| 7  | X           | f                                            | f*x         | Е        |           |          |          |           |          |         |   |
| 8  | 0           |                                              |             | 134      | Here, Mea | n(μ)=    | 0.806667 | C14/B14   |          |         |   |
| 9  | 1           | 109                                          | 109         | 108      |           | N=       | 300      |           |          |         |   |
| 10 | 2           | 40                                           | 80          | 44       |           | E=       | 133.903  | G\$9*POIS | SON(A8,C | G\$8,0) |   |
| 11 | 3           | 12                                           | 36          | 12       |           |          |          |           |          |         |   |
| 12 | 4           | 3                                            | 12          | 2        |           |          |          |           |          |         |   |
| 13 | 5           | 1                                            | 5           | 0        |           |          |          |           |          |         |   |
| 14 |             | 300                                          | 242         | 300      |           |          |          |           |          |         |   |
| 15 |             |                                              |             |          |           | Name:Kar | ina Kc   |           |          |         |   |
| 16 |             |                                              |             |          |           | Roll:15  |          |           |          |         |   |

|    | А                                          | В                                  | С            | D           | Е           | F           | G                        | Н             | Ī            | J          | K |  |  |
|----|--------------------------------------------|------------------------------------|--------------|-------------|-------------|-------------|--------------------------|---------------|--------------|------------|---|--|--|
| 1  | A message                                  | centre for                         | ward 4 mes   | sages per r | ninute. Cor | npute the p | orobability <sup>·</sup> | that no. of   | forwarded    | message ar | e |  |  |
| 2  | i) Exactly 5                               | message ii                         | ) less than  | 6 messages  | iii) more t | han 8 mess  | age in an ir             | iterval of tw | vo minutes   |            |   |  |  |
| 3  | iv) atmost                                 | 10 message                         | e in an inte | rval of two | minutes v)  | almost 13 n | nessages in              | an interva    | l of three m | ninutes    |   |  |  |
| 4  |                                            |                                    |              |             |             |             |                          |               |              |            |   |  |  |
| 5  | solution:-L                                | et ,x=Numl                         | per of mess  | ages        |             |             |                          |               |              |            |   |  |  |
| 6  | Here,we h                                  | ere,we have                        |              |             |             |             |                          |               |              |            |   |  |  |
| 7  |                                            | Average( $\lambda$ )= 4 per minute |              |             |             |             |                          |               |              |            |   |  |  |
| 8  | i) Req.prob. =p(x=5)= 0.156293             |                                    |              |             |             |             |                          |               |              |            |   |  |  |
| 9  | ii) Req. pro                               | b. =p(x<6)=                        | =            | 0.78513     |             |             |                          |               |              |            |   |  |  |
| 10 |                                            | Average(λ)                         | )=           | 8           | For two m   | intues      |                          |               |              |            |   |  |  |
| 11 | iii) Req. pr                               | ob. =p(x>8)                        | =            | 0.407453    |             |             |                          |               |              |            |   |  |  |
| 12 | iv)Req. pro                                | b. =p(x≤10                         | )=           | 0.815886    |             |             |                          |               |              |            |   |  |  |
| 13 | Average( $\lambda$ )= 12 For three mintues |                                    |              |             |             |             |                          |               |              |            |   |  |  |
| 14 | v) Req. pro                                | b. =p(x≥13                         | )=           | 0.424035    |             |             |                          |               |              |            |   |  |  |
| 15 |                                            |                                    |              |             |             | Name: Kar   | ina kc                   |               |              |            |   |  |  |
| 16 |                                            |                                    |              |             |             |             |                          |               |              |            |   |  |  |

|    | Α           | В               | С                                                                                                                                                                              | D              | Е               | F           | G           | Н               | I           | J           | K            | L |
|----|-------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------|-------------|-------------|-----------------|-------------|-------------|--------------|---|
| 1  | Income dis  | stribution of   | f 1000 fami                                                                                                                                                                    | lies follows   | Normal distri   | oution with | Mean 4000   | 00 and S.D. 100 | 000. From t | his group o | ne family is |   |
| 2  | selected at | random, co      | mpute the j                                                                                                                                                                    | probability    | that income of  | this family | lies.       |                 |             |             |              |   |
| 3  |             | i) below 45     | 5000 ii) mo                                                                                                                                                                    | re than 420    | 00 iii) between | 45000 to 5  | 50000       |                 |             |             |              |   |
| 4  | Also estim  | ate the num     | ber of fami                                                                                                                                                                    | lies whose     | income lies     |             |             |                 |             |             |              |   |
| 5  |             | i) atleast 4    | 6000 ii) atn                                                                                                                                                                   | nost 50000     | iii) between 35 | 000 to 500  | 00          |                 |             |             |              |   |
| 6  |             |                 |                                                                                                                                                                                |                |                 |             |             |                 |             |             |              |   |
| 7  | Solution:-  | Let, x=Inco     | me                                                                                                                                                                             |                |                 |             |             |                 |             |             |              |   |
| 8  | Here, we h  | ave             |                                                                                                                                                                                |                |                 |             |             |                 |             |             |              |   |
| 9  |             | Mean(μ)=        | 40000                                                                                                                                                                          | $S.D(\sigma)=$ | 10000           | N=          | 10000       |                 |             |             |              |   |
| 10 | First Part  |                 |                                                                                                                                                                                |                |                 |             |             |                 |             |             |              |   |
| 11 | i) Req.prol | b. = $p(x<450)$ | 000)                                                                                                                                                                           |                | 0.69146246      | NORM.DI     | IST(45000,0 | C9,E9,1)        |             |             |              |   |
| 12 | ii) Req.pro | b = p(x > 42)   | (000)                                                                                                                                                                          |                | 0.42074029      | 1-NORM.     | DIST(4200   | 0,C9,E9,1)      |             |             |              |   |
| 13 | iii) Req.pr | ob = p(4500)    | 0 <x<50000< td=""><td>))</td><td>0.14988228</td><td>NORM.DI</td><td>IST(50000,0</td><td>C9,E9,1)-NOR</td><td>M.DIST(45</td><td>5000,C9,E9</td><td>,1)</td><td></td></x<50000<> | ))             | 0.14988228      | NORM.DI     | IST(50000,0 | C9,E9,1)-NOR    | M.DIST(45   | 5000,C9,E9  | ,1)          |   |
| 14 |             |                 |                                                                                                                                                                                |                |                 |             |             |                 |             |             |              |   |
| 15 | Second Pa   | rt              |                                                                                                                                                                                |                |                 |             |             |                 |             |             |              |   |
| 16 | i) Req.prol | b. = N*p(x>     | =46000)                                                                                                                                                                        |                | 2743            | G9*(1-NC    | RM.DIST(    | 46000,C9,E9,1   | ))          |             |              |   |
| 17 | ii) Req.pro | b. = N*p(x<     | <=50000)                                                                                                                                                                       |                | 8413            | G9*NORN     | M.DIST(500  | 000,C9,E9,1)    |             |             |              |   |
| 18 | iii) Req.pr | ob. $=N*p(3)$   | 5000 <x<50< td=""><td>0000)</td><td>5328</td><td>G9*(NOR</td><td>M.DIST(50</td><td>000,C9,E9,1)-</td><td>NORM.DIS</td><td>ST(35000,C</td><td>C9,E9,1))</td><td></td></x<50<>   | 0000)          | 5328            | G9*(NOR     | M.DIST(50   | 000,C9,E9,1)-   | NORM.DIS    | ST(35000,C  | C9,E9,1))    |   |
| 19 |             |                 |                                                                                                                                                                                |                |                 |             |             |                 |             |             |              |   |
| 20 |             |                 |                                                                                                                                                                                |                |                 |             |             |                 |             |             |              |   |
| 21 |             |                 |                                                                                                                                                                                |                |                 | Name        | Koyal Kc    |                 |             |             |              |   |
| 22 |             |                 |                                                                                                                                                                                |                |                 | Roll NO:    | 16          |                 |             |             |              |   |

|    | А           | В            | С                | D        | Е          | F          | G         | Н        | I      |
|----|-------------|--------------|------------------|----------|------------|------------|-----------|----------|--------|
| 1  | fit Poisson | distribution | n to followi     | ng data. |            |            |           |          |        |
| 2  | No. of Acc  | eidents:-    | 0                | 1        | 2          | 3          | 4         | 5        | 6      |
| 3  | Noo. Of D   | ays:-        | 195              | 91       | 40         | 20         | 10        | 3        | 1      |
| 4  |             |              |                  |          |            |            |           |          |        |
| 5  | Table for e | expected fre | equencies<br>f*x |          |            |            |           |          |        |
| 6  | X           |              |                  | Е        |            |            |           |          |        |
| 7  | 0           | 195          | 0                | 160      | Here, mean | n(μ)=      | 0.811     | C14/B14  |        |
| 8  | 1           | 91           | 91               | 130      |            | N=         | 360       |          |        |
| 9  | 2           | 40           | 80               | 53       |            | E=         | G\$9*POIS | SON(A8,G | \$8,0) |
| 10 | 3           | 20           | 60               | 14       |            |            |           |          |        |
| 11 | 4           | 10           | 40               | 3        |            |            |           |          |        |
| 12 | 5           | 3            | 15               | 0        |            |            |           |          |        |
| 13 | 6           | 1            | 6                | 0        |            |            |           |          |        |
| 14 |             | 360          | 292              | 360      |            |            |           |          |        |
| 15 |             |              |                  |          |            |            |           |          |        |
| 16 |             |              |                  |          |            | Name: Ko   | yal kc    |          |        |
| 17 |             |              |                  |          |            | Roll No: 1 | 6         |          |        |

|    | Α            | В             | С             | D        | E            | F           | G           | Н       |
|----|--------------|---------------|---------------|----------|--------------|-------------|-------------|---------|
| 1  | Fit binomia  | al distrituti | on to given   | data.    |              |             |             |         |
| 2  | No. of girls | :-            | 0             | 1        | 2            | 3           | 4           |         |
| 3  | No. of fam   | ilies:-       | 20            | 112      | 244          | 115         | 21          |         |
| 4  |              |               |               |          |              |             |             |         |
| 5  | Solution:-   | Let x= Nun    | nber of girls | 5        |              |             |             |         |
| 6  | Here,we ha   | ave           |               |          |              |             |             |         |
| 7  |              | n=            | 4             | p=       | 0.5          | N=          | 512         |         |
| 8  | Calculation  | table of e    | xpected fre   | quencies |              |             |             |         |
| 9  |              | x=r           | x=r           | x=r      | x=r          |             |             |         |
| 10 |              | 0             | 20            | 0.0625   | 32           | Where,O=    | observed fr | equency |
| 11 |              | 1             | 112           | 0.25     | 128          | E=Expecte   | d frequency | /       |
| 12 |              | 2             | 244           | 0.375    | 192          |             |             |         |
| 13 |              | 3             | 115           | 0.25     | 128          |             |             |         |
| 14 |              | 4             | 21            | 0.0625   | 32           |             |             |         |
| 15 |              |               | 512           | 1        | 512          |             |             |         |
| 16 |              |               | P(x=r)=       | BINOMDIS | T(B10,C\$7,I | E\$7,0)     |             |         |
| 17 |              |               | E=            | G\$7*D11 |              |             |             |         |
| 18 |              |               |               |          |              |             |             |         |
| 19 |              |               |               |          |              | Name= Ko    | yal Kc      |         |
| 20 |              |               |               |          |              | Roll NO: 16 | 5           |         |

|          | Α        | В         | С        | D             | E               | F               | G          | Н       | I  | J  |
|----------|----------|-----------|----------|---------------|-----------------|-----------------|------------|---------|----|----|
| 1        | From th  | e given   | data con | pute first fo | our central moi | nents. Also, co | mpute me   | easures |    |    |
| 2        | of centr | al tende  | ncy, Mea | sures of dis  | persion, skewn  | ess and kurtosi | is and int | repret  |    |    |
| 3        | the resu | lt.       |          |               |                 |                 |            |         |    |    |
| 4        | 45       | 50        | 60       | 70            | 75              | 50              | 80         | 85      | 70 | 60 |
| 5        |          |           |          |               |                 |                 |            |         |    |    |
| 6        | Solution |           |          |               | entral moments  | S               |            |         |    |    |
| 7        | X        | (x-x*)    | , ,      | $(x-x^*)3$    | (x-x*)4         |                 |            |         |    |    |
| 8        | 45       | -19.5     | 380.25   |               | 144590.0625     |                 |            |         |    |    |
| 9        | 50       | -14.5     | 210.25   |               | 44205.0625      |                 |            |         |    |    |
| 10       | 60       | -4.5      | 20.25    | -91.125       | 410.0625        |                 |            |         |    |    |
| 11       | 70       | 5.5       | 30.25    | 166.375       | 915.0625        |                 |            |         |    |    |
| 12       | 75       | 10.5      | 110.25   | 1157.625      | 12155.0625      |                 |            |         |    |    |
| 13       | 50       | -14.5     | 210.25   | -3048.625     | 44205.0625      |                 |            |         |    |    |
| 14       | 80       | 15.5      | 240.25   | 3723.875      | 57720.0625      |                 |            |         |    |    |
| 15       | 85       | 20.5      | 420.25   | 8615.125      | 176610.0625     |                 |            |         |    |    |
| 16       | 70       | 5.5       | 30.25    | 166.375       | 915.0625        |                 |            |         |    |    |
| 17       | 60       | -4.5      | 20.25    | -91.125       | 410.0625        |                 |            |         |    |    |
| 18       |          | 0         | 1672.5   | 135           | 482135.625      |                 |            |         |    |    |
|          | Mean     |           |          |               |                 |                 |            |         |    |    |
| 19       | =        | 64.5      | n =      | 10            |                 |                 |            |         |    |    |
| 20       | For firs | t four ce | ntral mo | ments         |                 |                 |            |         |    |    |
| 21       | For      | Value     | Formula  | l             | For             | Value           | Formula    |         |    |    |
| 22       | m1 =     | 0         | 0        |               | Mean =          | 64.5            | 64.5       |         |    |    |
| 23       | m2 =     | 167.25    | 167.25   |               | <b>S.D.</b> =   | 12.93251716     | 12.933     |         |    |    |
| 24       | m3 =     | 13.5      | 13.5     |               | β1 =            | 0.00004         | 4E-05      |         |    |    |
| 25       | m4 =     | 48214     | 48214    |               | <b>b</b> 2 =    | 1.723601922     | 1.7236     |         |    |    |
| 26       |          |           |          |               |                 |                 |            |         |    |    |
| 27       |          |           |          |               |                 |                 |            |         |    |    |
| 28<br>29 |          |           |          |               | Name: Koyal Kc  |                 |            |         |    |    |
| 30       |          |           |          |               |                 |                 |            |         |    |    |
| 50       |          |           |          |               |                 |                 |            |         |    |    |

|    | Α           | В                             | С            | D         | Е     | F        | G       | Н         | I        | J       | K |
|----|-------------|-------------------------------|--------------|-----------|-------|----------|---------|-----------|----------|---------|---|
| 1  | Fit Poissor | n distributio                 | n to follow: | ing data. |       |          |         |           |          |         |   |
| 2  | No. of Def  | ects                          | 0            | 1         | 2     | 3        | 4       | 5         |          |         |   |
| 3  | No. of pag  | es                            | 135          | 109       | 40    | 12       | 3       | 1         |          |         |   |
| 4  |             |                               |              |           |       |          |         |           |          |         |   |
| 5  | Solution:-  | Table for expected frequencie |              |           |       |          |         |           |          |         |   |
| 6  |             |                               |              |           |       |          |         |           |          |         |   |
| 7  | Х           | x f f*x E                     |              | Е         |       |          |         |           |          |         |   |
| 8  | 0           | 0 135 0 134                   |              | Here, Mea | n(μ)= | 0.806667 | C14/B14 |           |          |         |   |
| 9  | 1           | 109                           | 109          | 108       |       | N=       | 300     |           |          |         |   |
| 10 | 2           | 40                            | 80           | 44        |       | E=       | 133.903 | G\$9*POIS | SON(A8,C | i\$8,0) |   |
| 11 | 3           | 12                            | 36           | 12        |       |          |         |           |          |         |   |
| 12 | 4           | 3                             | 12           | 2         |       |          |         |           |          |         |   |
| 13 | 5           | 1                             | 5            | 0         |       |          |         |           |          |         |   |
| 14 |             | 300                           | 242          | 300       |       |          |         |           |          |         |   |
| 15 |             |                               |              |           |       | Name:Koy | al Kc   |           |          |         |   |
| 16 |             |                               |              |           |       | Roll:16  |         |           |          |         |   |

|    | А                                          | В                                  | С            | D           | Е           | F           | G                        | Н             | Ī            | J          | K |  |  |
|----|--------------------------------------------|------------------------------------|--------------|-------------|-------------|-------------|--------------------------|---------------|--------------|------------|---|--|--|
| 1  | A message                                  | centre for                         | ward 4 mes   | sages per r | ninute. Cor | npute the p | orobability <sup>·</sup> | that no. of   | forwarded    | message ar | e |  |  |
| 2  | i) Exactly 5                               | message ii                         | ) less than  | 6 messages  | iii) more t | han 8 mess  | age in an ir             | iterval of tv | vo minutes   |            |   |  |  |
| 3  | iv) atmost                                 | 10 message                         | e in an inte | rval of two | minutes v)  | almost 13 n | nessages in              | an interva    | l of three m | ninutes    |   |  |  |
| 4  |                                            |                                    |              |             |             |             |                          |               |              |            |   |  |  |
| 5  | solution:-L                                | et ,x=Numl                         | per of mess  | ages        |             |             |                          |               |              |            |   |  |  |
| 6  | Here,we h                                  | ere,we have                        |              |             |             |             |                          |               |              |            |   |  |  |
| 7  |                                            | Average( $\lambda$ )= 4 per minute |              |             |             |             |                          |               |              |            |   |  |  |
| 8  | i) Req.prob. =p(x=5)= 0.156293             |                                    |              |             |             |             |                          |               |              |            |   |  |  |
| 9  | ii) Req. pro                               | b. =p(x<6)=                        | =            | 0.78513     |             |             |                          |               |              |            |   |  |  |
| 10 |                                            | Average(λ)                         | )=           | 8           | For two m   | intues      |                          |               |              |            |   |  |  |
| 11 | iii) Req. pr                               | ob. =p(x>8)                        | =            | 0.407453    |             |             |                          |               |              |            |   |  |  |
| 12 | iv)Req. pro                                | b. =p(x≤10                         | )=           | 0.815886    |             |             |                          |               |              |            |   |  |  |
| 13 | Average( $\lambda$ )= 12 For three mintues |                                    |              |             |             |             |                          |               |              |            |   |  |  |
| 14 | v) Req. pro                                | b. =p(x≥13                         | )=           | 0.424035    |             |             |                          |               |              |            |   |  |  |
| 15 |                                            |                                    |              |             |             | Name: Koy   | /al kc                   |               |              |            |   |  |  |
| 16 |                                            |                                    |              |             |             | Roll:16     |                          |               |              |            |   |  |  |