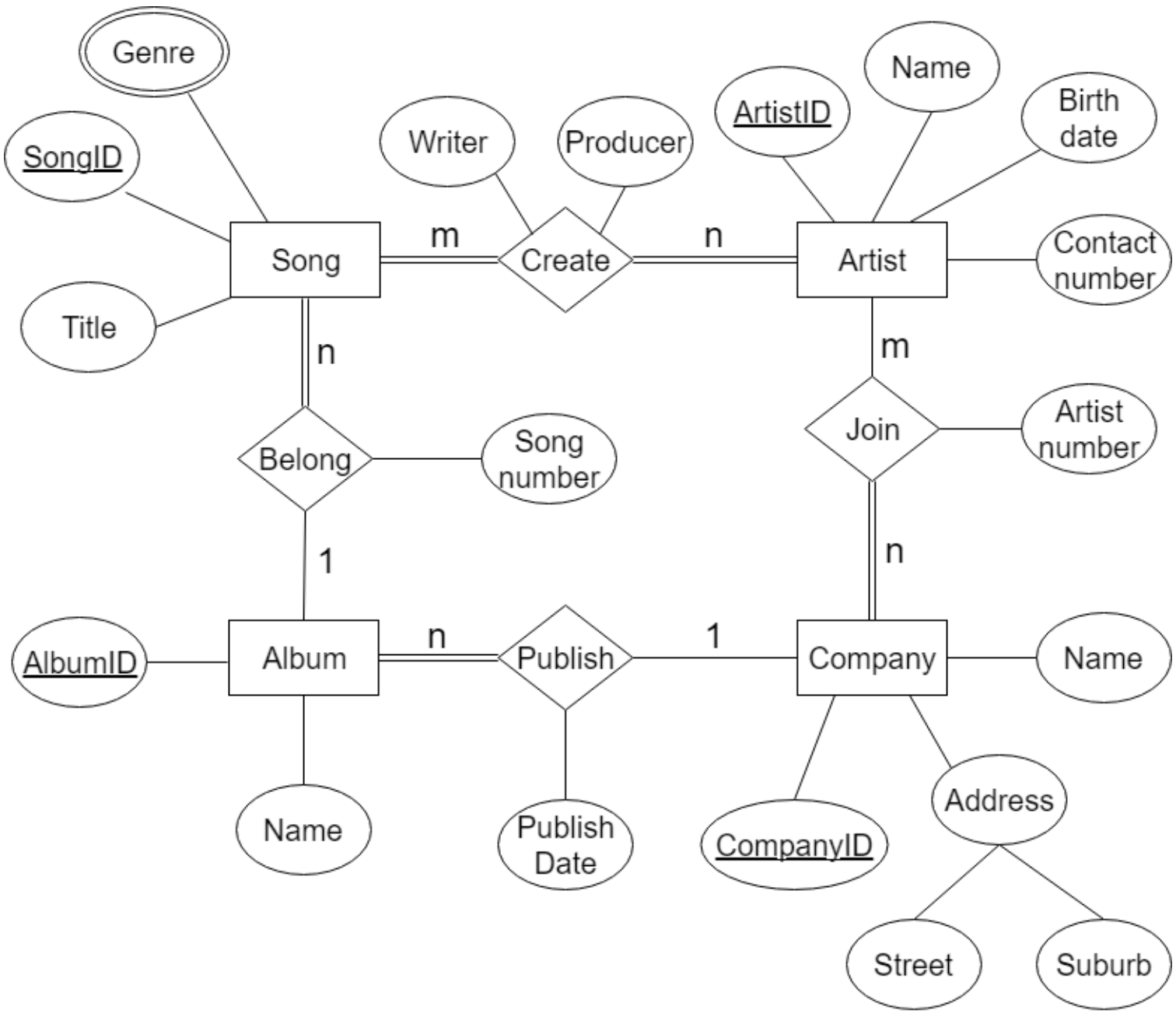
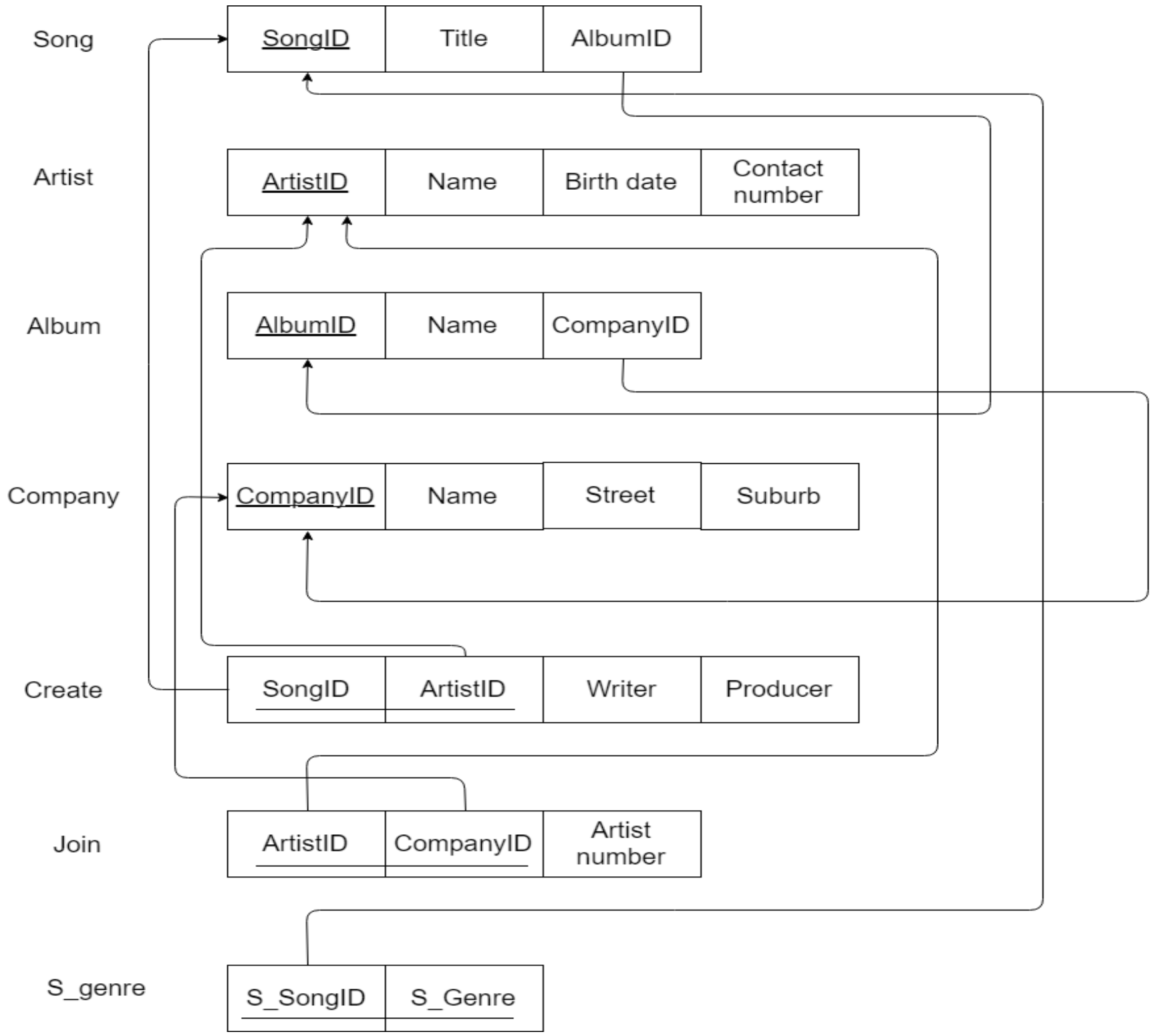
Question 1:


Genre
SongID
Writer
Producer
ArtistID
Name
Birth date
Song
m
Create
n
Artist
Contact number
Title
n
m
Belong
Song number
Join
Artist number
1
n
AlbumID
Album
n
Publish
1
Company
Name
Name
Publish Date
CompanyID
Address
Street
Suburb

Question 2:


Song
SongID
Title
AlbumID
Artist
ArtistID
Name
Birth date
Contact number
Album
AlbumID
Name
CompanyID
Company
CompanyID
Name
Street
Suburb
Create
SongID
ArtistID
Writer
Producer
Join
ArtistID
CompanyID
Artist number
S_genre
S_SongID
S_Genre

Question 3:

(1):

$$\pi_{\{title\}}(Movie \bowtie MovieShowing \bowtie (\sigma_{(genre='comedy')}(GenreOfFilm)) \bowtie (\sigma_{(location='George\ St')}(Cinema) \cap \sigma_{(cName='Event')}(Cinema)))$$

(2):

$$A \leftarrow \pi_{\{title,releaseDate\}}(Movie \bowtie MovieShowing \bowtie (\sigma_{(location='Chatswood')}(Cinema) \cap \sigma_{(cName='Event')}(Cinema)))$$

$$B \leftarrow \pi_{\{title,releaseDate\}}(Movie \bowtie MovieShowing \bowtie (\sigma_{(cName='Hoyts')}(Cinema) \cap \sigma_{(location='Chatswood')}(Cinema)))$$

$$C \leftarrow A \cap B$$

(3):

$$A \leftarrow \pi_{\{name\}}(WatchMovie \bowtie Filming \bowtie (\sigma_{(gender='male')}(Custmoer)) \bowtie (\sigma_{(name='James\ Wan')}(Director)) \bowtie (\sigma_{(title='Aquaman')}(Movie)))$$

$$B \leftarrow \pi_{\{name\}}(WatchMovie \bowtie Filming \bowtie (\sigma_{(gender='male')}(Custmoer)) \bowtie (\sigma_{(name='James\ Wan')}(Director)) \bowtie (\sigma_{(title\neq'Aquaman')}(Movie)))$$

$$C \leftarrow \pi_{\{name\}}(WatchMovie \bowtie Filming \bowtie (\sigma_{(gender='male')}(Custmoer)) \bowtie (\sigma_{(name='James\ Wan')}(Director)) \bowtie Movie)$$

$$D \leftarrow A \cap (C - B)$$

(4):

$$A \leftarrow \pi_{\{name\}}(Filming \bowtie Director \bowtie Customer \bowtie (\sigma_{(genre='fantasy')}(GenreOfFilm)))$$

$$B \leftarrow \pi_{\{name\}}(Filming \bowtie Director \bowtie Customer \bowtie (\sigma_{(genre='violence')}(GenreOfFilm)))$$

$$C \leftarrow A \cap B$$

(5):

$$A \leftarrow \pi_{\{name\}}(WatchMovie \bowtie (\sigma_{(30<=age<=50)}(Customer)) \bowtie (\sigma_{(runningTime>120)}(Movie)))$$

$$B \leftarrow \pi_{\{name\}}(WatchMovie \bowtie MovieShowing \bowtie (\sigma_{(30<=age<=50)}(Customer)) \bowtie (\sigma_{(runningTime>120)}(Movie)) \bowtie (\sigma_{(location='Hoyts')}(Cinema)))$$

$$C \leftarrow A - B$$